PESTICIDES ADVISORY BOARD

PROCEEDINGS OF PUBLIC HEARING

CONSEIL CONSULTATIF DES PESTICIDES

COMPTE-RENDU DE L'AUDIENCE PUBLIQUE

Fredericton, N.B. / N.-B.

December 2, 1986 / Le 2 décembre 1986

TABLE OF CONTENTS

Introduction 1

Dr. Lucy Dyer, New Brunswick Conservation Council 3

Mrs. Janice Harvey, New Brunswick Conservation Council 7

Mr. David Coon, New Brunswick Conservation Council 17

Ms. Cindy Gallagher 26

Mrs. Donna Mulherin 28

Mr. Robert Spurway, Chairman of the Maritimes Section of the Canadian Institute of Forestry 31

Mr. Keith Bowser, Fraser Incorporated 37

Mr. Stephen Miller, Professional Agricologist and Vice-President of Lawn Management 45

Mrs. Cathy Richard, Concerned Parents 46

Mr. Don Palfrey, Crop Protection Institute of Canada 52

***

Secretarial Note: Due to technical problems, sections of the recording tapes were unintelligible. The transcript has been produced as faithfully as possible.

Note de la rédaction: En raison de difficultés techniques, on n'a pu comprendre certaines parties de l'enregistrement de l'audience. On reproduit ici le compte-rendu aussi fidèlement que possible.

CHAIRMAN: Good Evening. My name is Ken Browne. I'm Chairman of the Pesticides Advisory Board and as Chairman of the Pesticides Advisory Board, I will be chairing this evening's meeting.

This is a public meeting and has been called to meet the requirement of the Pesticides Control Act. As in previous years I will outline the responsibilities of the Board and the members of the Board for you. With regard to permits as required under the Act, the Board is charged with reviewing these requests and then advising the Minister of Municipal Affairs and Environment on these requests.

The key word is advisory. We review all requests on their technical merit, such as the toxicity of the products, the environmental fate or persistence of products, the qualifications of the operators and the applicators, etc. Our advice is given to the Minister for his use in deciding whether particular programs or products should be carried out in the Province.

It is the Minister who is charged under the Act with the responsibility for the issuance of permits or for the prohibition or restriction of certain products or programs in the province of New Brunswick. The Minister has many avenues for advising him. One avenue could be the briefs presented here this evening.

This brings me to the primary objective of this meeting. It is to provide members of the public with an opportunity to make presentations on any matter pertaining to pesticides. As I have stated at the start of previous meetings, a full written transcript of the meeting is subsequently prepared and forwarded to the Minister for his consideration.

It is your opportunity to inform the Minister as to your, the public's, thoughts on pesticide related issues. In order to ensure that the transcript accurately reflects the comments of the participant, we will be tape recording this evening's session. If possible, I would also ask that you provide us copies of your brief. In addition, to ensure that we transmit the information accurately to the Minister, the members of the Board may wish to ask questions or points of clarification of the presenter.

The Board members are here to listen to the presentations and to ensure that the intent of the meeting, that of forwarding information from the public to the Minister, is carried out as clearly and as accurately as possible.

Now I would like to turn to the members of the Board. Before I introduce them I would like to take this opportunity to personally thank them and on behalf of the Minister, for all their input and hard work which they have given to the Board, and for their dedication towards making the transportation, the sale, the application and disposal of pesticides in the Province of New Brunswick as safe as they are.

As I mentioned my name is Ken Browne. I'm a Biologist with the Department of Municipal Affairs and Environment. On my far right, is Mr. Steven Hoyt, Forester with the Department of Natural Resources and Energy. To his left is Michael Sprague, Aquatic Biologist with the Department of Municipal Affairs and Environment. To his left, Mr. Kirk Gordon, Environmental Planner also with the Department of Municipal Affairs and Environment.

On my immediate right is Mr. Sandy Perley, Plant Pathologist with the Department of Agriculture. On my far left, filling in for Dr. Walters is Ron Hicks, Senior Consultant with the Department of Health and Community Service. On his right, Bandu Imbulgoda, Occupational Hygienist with the Occupational Health and Safety Commission. To his right, David Finamore, Entomologist, Department of Agriculture and on my immediate left, Norman Prentice, Wildlife Biologist, Department of Natural Resources and Energy.

SOME HOUSEKEEPING ITEMS: Those who are presenting briefs should identify themselves to Mr. Ken Corbett who is sitting at the back of the room. This is a no-smoking room and a no-smoking meeting and I request that you respect this. There will be time to light up during the coffee-break. For the media, I ask that you extend your normal courtesy and conduct yourself and all interviews in the hall or at the end of the room during the coffee break or at the end of the session.

We will be providing simultaneous translation for those people who require it. There are earphones for that. There are microphones located here in front of the room. I would ask those people who are making presentations to use those when they're making their presentation and when they're responding to any questions.

At the end of each brief, I will ask the presenters if they will entertain questions or points of clarification from members of the Pesticides Advisory Board. I would again like to stress the point that the Board is an Advisory Board and we're here tonight to gather information and forward it on to the Minister of Municipal Affairs and Environment in as accurate a manner as possible. The Board is not here to enter into debate or discussions with any of the presenters or anyone from the floor. If time permits, I will ask other presenters if they will entertain questions from the floor.

Are there any questions with regards to this evening's meeting? Yes?

MS. CINDY GALLAGHER: Am I allowed, when I give my brief, am I allowed to use names of people? Like ... I thought I could use names of people I talked to in the government.

CHAIRMAN: I have no trouble with it.

MS. CINDY GALLAGHER: No?

CHAIRMAN: Unless it's mine. I have no trouble with it. Any further questions? If not, I would like to call on the first presenter please, Janice Harvey.

Perhaps I could call on Lucy Dyer.

DR. LUCY DYER, NEW BRUNSWICK CONSERVATION COUNCIL

I'm Dr. Lucy Dyer and I'm here to present part of the brief for the Conservation Council. The other two people ought to be here very shortly I would hope.

The section that I was going to address tonight is on problems that the Conservation Council sees with the forestry spray programs, particularly against the spruce budworm.

Over the past thirty years and more, more than 16,000 tons of several different highly toxic biocides have been sprayed over our forests to control the spruce budworm. The budworm is nevertheless still a major problem, and other pests, such as the spruce budmoth, have not been prevented from increasing in their numbers.

More than 130 million non-inflated dollars have been spent on this program and no end is in sight. The sprayers seem to be on a treadmill similar to that which has caught up many farmers in their efforts to control pests only by the use of broad-spectrum chemicals.

The use of broad-spectrum chemicals has inherent dangers. Among these are the dangers of killing off natural predators and parasites of either the target organism or of other potential pests, leading to secondary outbreaks of other infestations. Killing pollinators can also have unpredictable effects on other plants.

No matter how well pesticides are applied, exposure to them always has the potential of causing serious health problems. The absolute safety or harm resulting from pesticide use can never be really conclusively proven. As a result, an objective assessment of the real risks involved should lead to a general policy of much more stringent application of all pesticides, and more reliance on safer alternatives, such as low-risk biological controls, pheromones and improved management practices, not only in forestry, but also in agriculture.

The Conservation Council feels that the time has come to end the large-scale spraying of our forests with fenitrothion andor other broad-spectrum biocides. In its place, an integrated management program should be instituted which will rely mainly on the use of Bt to save trees where needed, followed by the use of pheromones to reduce the dangers of the following year's infestation. And this, combined with a forest management policy aimed at reducing the amount of susceptible forest in the province.

These alternatives will require a bold departure from the type of risk assessment and decision-making that has brought New Brunswick to the present impasse on this issue. It would enable the time, effort and money now being spent on the spray program to be used in a more rational and constructive manner. In short, it could provide an economical, safe and politically acceptable alternative to the present "no-win" situation by focussing on a possible real solution to this 30-year old problem. To accomplish this, we need to dramatically increase the use of Bt, and dramatically accelerate the development of pheromones.

Bt is specific to the larvae of Lepidoptera. As such, it is intrinsically much less harmful to the forest ecosystem than is the use of general biocides such as matacil or fenitrothion. The latter are toxic to most insects and spiders, including beneficial ones as well as having possible harmful effects on birds, fish and people. These have been well documented previously.

Bt has been widely and successfully used in other jurisdictions against the budworm and against other insects and it's also been used increasingly in New Brunswick, and its cost has recently been reduced. Considering its relative environmental safety, one must conclude that it is an effective alternative to chemical pesticides and should be much more widely used where tree protection is felt to be necessary, and particularly in any environmentally sensitive areas or close to human habitations.

An even safer alternative to the use of pesticides are pheromones. These are completely non-toxic, and act on the budworm by modifying the behavior of the adults to reduce mating and egg laying rather than by killing larvae.

Highly significant reductions in the number of eggs deposited by female budworm exposed to relatively low concentrations of pheromone have recently been recorded over the last two or three years. Tests have been conducted not only in the laboratory but on a small scale in an actual forest situation. Even when high populations of budworm which previously were thought not to respond to pheromones were confined within large cages in the forest, pheromone application did reduce egg laying by 85%, sometimes more, and outside cages where influx of wild moths from other areas could not be prevented, the number of eggs found in pheromone-treated areas was reduced by 66% over areas that were untreated.

These results should be enough to convince the government to make a major effort to make a full-scale application of pheromones as soon as possible.

In Western North America including British Columbia, pheromones have been sprayed aerially on a small scale to control another pest, the Douglas Fir tussock moth. At high insect densities, suppression of mating and egg-laying of this pest was similar to that found for the spruce budworm here in New Brunswick in a case situation. They found in the open fairly large several hectares plots that they got reductions of 71% and 81% in populations at pheromone doses of 8 and 25 g/ha respectively.

When they used lower densities of populations, much higher suppression rates were achieved, up to 0 egg masses per female at high pheromone levels. So it rather appears that the use of pheromones is dependent upon the density of the insects becoming increasingly effective as the density decreases which is just the opposite of conventional pesticides.

These results would indicate that the use of pheromone application against the spruce budworm following an earlier larvicidal application of Bt, might well achieve very dramatic reductions in the populations of budworms. The Bt is capable of reducing the number of larvae by around 80%, and this of course also decreases the number of adults that will be available a few weeks later, and that the use of pheromone will prevent mating and effectively eliminate from the population another 80% to 90% of the remaining ones.

And this can well achieve levels ... what they have achieved in tests in the fields up to 97% and there's theoretically no reason why this could not be up to 99%.

Only one application of relatively low doses of pheromone is enough to provide control for a whole flight season with some formulations. Combined with its effectiveness when used following Bt, this should make its use economically feasible.

In summary, the use of chemical pesticides should be phased out as quickly as possible wherever non-toxic alternatives exist in either forestry or agriculture. We request that the Pesticides Advisory Board issues no more permits for the large-scale, aerial use of chemical pesticides to combat the spruce budworm and that the government increase its efforts to see that pheromones become an operational component of efforts to control this pest as soon as possible.

They are within probably a few years of deployment now.

CHAIRMAN: Thank you very much. Are there any questions from members of the Board?

I had one question in regards to ...is there a reference for the numbers that you were quoting, 66% reduction in the number of eggs found...

DR. LUCY DYER: For the New Brunswick ones, this was the result of conversation with the people who were conducting this research. So the person to contact would probably be Dr. Bill Seabrook at the UNB Biology Department.

CHAIRMAN: Any other questions? Would you entertain questions from the floor?

DR. LUCY DYER: Yes.

CHAIRMAN: Are there any questions from the floor? If not, thank you very much. Our second presenter will be Janice Harvey, New Brunswick Conservation Council.

MRS. JANICE HARVEY, NEW BRUNSWICK CONSERVATION COUNCIL

May I present from here?

CHAIRMAN: Certainly, yes.

MRS. JANICE HARVEY: I have copies of the brief. Mr. Chairman, members of the Pesticides Advisory Board. Before I start, I'd like to point out that due to an imperfect utilization of technology, the first line on some of your pages may be missing so you might have to refer to the transcript to fill those in or I can provide you with a backup copy after the session. I'd like to thank you for the opportunity to bring several concerns to you regarding pesticide use in the province.

There will be particularly be two issues that I'll address in my presentation. First the matter of the process through which citizens of this province can have input into decisions regarding pesticide use.

First of all, we are participating in this meeting, as with every meeting previously, in an information vacuum. While we can speculate about the pesticide programs which will be run this year, it is difficult to frame comments and concerns without any concrete frame of reference except past experience. This is less of a problem for groups or individuals based in Fredericton who have time to spend poring through last year's permits. However, those who have no access to Fredericton, or the time to take advantage of this access, can only work from speculation about specific pesticide use which will occur during the coming spray season, or from a position of general concern.

I'd like to make a recommendation that the Pesticides Advisory Board set deadlines for the receipt of pesticide permit applications, that those applications be made public, and that the annual meeting of the Pesticides Advisory Board be held within a reasonable time following the release of this information to allow people to respond to the particular details of the spray permit applications. The Pesticides Advisory Board should take this feedback into account in its decisions to recommend permit approvals. Otherwise, no meaningful public consultation can be claimed.

Secondly, there is a total absence of feedback from the Pesticides Advisory Board to the information presented or recommendations made at this public meeting. Briefs presented in this forum go into the proverbial "black hole", and as far as we're concerned, they never come out. This is the cause of great frustration and dissatisfaction on the part of the Conservation Council and many other groups and individuals, some of whom refuse to participate in this forum any further.

Our second recommendation is that a feedback system be put into place which indicates within a reasonable length of time the fate of the recommendations and information presented to this Board. This feedback should reflect the nature of policy decisions or lack thereof, and the rationale for the same, as a result of the specific information received by the Pesticides Advisory Board. This information could come from the PAB itself or the offices of the ministers concerned.

Thirdly, another source of frustration has been the lack of accountability for decisions made regarding pesticide use and permit approval, and for long term pest management planning. It has been made clear by the Pesticides Advisory Board that policy decisions are not made at that level; however, it is clear that input into decisions comes from several sources, including the PAB. The lack of any deliberate and long term planning process for pest management in this province has resulted in virtually no accountability for what has amounted to a forestry spray program of international significance in magnitude and longevity.

Since the Pesticides Advisory Board is the only obvious body which invites public input on this issue, it is inevitable that the PAB is held responsible for decisions made in this regard. On the other hand, you inform us that you function only in a technical capacity, and accept no responsibility for the "pesticides only" strategies which have become the status quo in New Brunswick forestry and agricultural operations.

We are aware of the decision-making process for policy issues. These pronouncements come from the offices of ministers of the Crown. However, we are not naïve enough to believe that ministers make these decisions without direction from bodies such as the PAB. The very existence of the PAB over the past several years has given the public to believe that this is the body to which issues of a policy nature should be directed - that this is the body "to convince". If this is not the case, then the record should be set straight at this time.

The Conservation Council would like to recommend that the Pesticides Advisory Board, in conjunction with the ministers of those departments represented on the Board, prepare a public statement which describes in detail the decision-making process regarding pesticide policy in New Brunswick, naming accountable bodies or individuals, and recommending the appropriate avenues through which citizens should channel their concerns so as to gain satisfactory access to policy planners.

The second area of concern that I would like to address is the use of pesticides for commercial and domestic lawn care in urban and suburban areas.

I am aware that the Pesticides Advisory Board grants permits for commercial lawn care operations, outlining the conditions under which spraying takes place. The PAB also has the responsibility to see that these operations comply with those conditions.

However, the reality is that commercial lawn care companies often operate in flagrant violation of regulations, and in general bad faith, as they convince homeowners of the necessity to apply toxic chemicals to their lawns. Several local cases have been documented which attest to this.

The fact is that the lawn care industry is a $1.5 billion industry. The key to the industry's surge in recent years has been the introduction of the "full service" tanker spray truck. While homeowners have been able to use chemicals similar to those used by commercial companies for years, they have not used them as much and in such quantities because of the work and hazards entailed in applying them.

By pre-mixing pesticides and fertilizer in large quantities and applying them from a nozzle, lawn care companies have reduced application time to just minutes per lawn.

This enables one person with a tank truck to treat dozens of lawns per day, making spray service price competitive with do-it-yourself products. But applicators don't stop there. Instead of selling single applications, they sell a season-long program of herbicide, fungicide and insecticide treatments. Like the Book-of-the-Month Club, once you sign up, they keep coming back forever unless you tell them to stop. The success of these companies has resulted in increases not only in the number of lawns treated and the quantity of pesticide used, but also in the number of different pesticides employed and their frequency of application.

A local nursery owner has called the lawn care companies and franchises not responsible "lawn care experts", but licenses to print money. Indeed, according to this expert, the local nursery owner - not myself, one application of herbicides at the right time, properly applied, with as little as half the recommended dose will give the same results as the two applications which commercial companies apply at full dose.

Indeed, this expert maintains, that once a healthy lawn is established it would only require one herbicide application every two years to control weeds. The desired lawn care method practiced by this horticulturist is integrated pest management and the encouragement of "fat grass" through pH and fertilizer control.

It is clear that this commercial lawn care industry with its portable pesticide operations has little to do with a proper understanding of lawn care ecosystems. They sell their product with scare tactics and I'm quoting from a brochure "there are thousands of killers loose in your lawn" and misleading statements, leaving the consumer to figure out the significance of the service they had just contracted for themselves. While this might be of little significance with any other consumer product or service, where poisons are concerned, control must be exercised rigorously by regulatory agencies.

Fingers are often pointed at the domestic use of weedkillers and insecticides as a source of exposure which is totally unregulated and therefore far more serious. While I do not have the figures, I would like to suggest that the bulk of commercial pesticides bought far outweighs those retail sales.

While the Conservation Council is concerned about the misuse of domestic pesticide products, we believe the magnitude of the problems generated or to be generated by commercial lawn care operations require immediate and definitive action. We believe there to be no discussion of comparative risk and benefit, since these pesticides are being used for cosmetic purposes only.

As well as the existing permit conditions, the Conservation Council would like to make the following recommendations for conditions to be included in the operating permits granted to these companies.

First, that when public lands are to be sprayed with pesticides, commercial lawn care companies be required to give written public notification one week prior to application and post signs to indicate the area sprayed for at least two weeks following the application.

Second, that commercial lawn care companies be required to notify the neighbors of private homes where lawns are to be sprayed one week prior to application and post signs for two weeks following the application.

Third, that commercial lawn care companies be required to give the homeowner full information about the nature of the lawn care program being undertaken, as well as the equivalent of a materials safety data sheets on each chemical to be used to the contractor prior to application; and that appropriate safety measures are communicated to the contractor.

Fourth, that the frequency of applications of pesticides by commercial lawn care companies be regulated to prevent abuse, and that they be restricted to the time of year when the greatest efficacy will be achieved. For example, herbicides I'm told by a horticulturist should not be applied in July and August.

Fifth, that commercial lawn care companies be required to present to a contractor a copy of the permit under which that company is operating.

Of course, the key to success of these permit conditions is the policing of the industry to ensure compliance. This is obviously a budgetary problem, particularly in a department with an annual budget which is scandalously low.

However, with a proper public education program and the fostering of a co-operative attitude within communities, a large degree of self- or citizen-policing could occur. No homeowner wants to poison their children, pets, neighbors or newspaper deliverers.

It is indeed in their best interest to ensure that the lawn care company operate within the conditions of the permit. Therefore, by providing the homeowner with this information, infractions and violations would undoubtedly be reported to the department. Under the current situation, these companies operate in virtual secrecy. Phone calls to the Conservation Council from homeowners who have had their lawns sprayed or neighbors of the same, invariably indicate either the total lack of information from which decisions to hire such a company are made, or the shoddiness of the spray operation itself.

This is a public health issue of great magnitude, and it is bound to get worse unless action is taken now to control what amounts to be a proliferation of chemical pesticides within urban environments.

Finally, regarding the use of domestic pesticides, the Conservation Council would like to make two recommendations.

First, that the Pesticides Advisory Board recommend that the Pesticides Control Act be amended to expand the definition of "pesticide" to include domestic pesticides.

It is unacceptable that products containing 2,4-D still be available on the domestic market while this chemical has been withdrawn from other uses in the Province.

And secondly, that domestic users of pesticide utilizing spray technology be bound by the same notification requirements as commercial applicators.

Thank you very much.

CHAIRMAN: Any questions from members of the Board? On recommendation with 2,4-D, the posting of various public lands for at least two weeks following application, was this two week period based on some study or is there some information that you could provide to the Board?

MRS. JANICE HARVEY: I can provide it. It was based on a review of a lot of literature which gave quite a range of time. There is scientific dispute on how long you should stay away from a lawn or a public place that has been sprayed and this was a compromise between the two extremes. My concern is that some lawn care companies are suggesting that on a nice warm sunny day, you can let your children out after twenty minutes. From the literature that we reviewed concerning the time lag, two weeks seem to be an appropriate compromise between the two extremes. We can provide you with those references if you wish.

CHAIRMAN: OK. And whether or not it was for a particular product or all the lawn care products.

MRS. JANICE HARVEY: It was generic... a generic recommendation.

CHAIRMAN: Was there any, I didn't notice it in here but was there any kind of recommendation with regards to posting for the private citizen?

MRS. JANICE HARVEY: The final recommendation I believe suggests that domestic users utilizing spray technology be bound by the same notification requirement as commercial applicators.

CHAIRMAN: So that would include the posting of the areas but not the issuing of permits or anything.

MRS. JANICE HARVEY: No.

CHAIRMAN: Just the posting?

MRS. JANICE HARVEY: No, No. Just the posting and the notification of neighbors. We didn't think this was necessary if there were to be a manual dabbing of a dandelion but if a spray technology was going to be used, that it would be appropriate.

MR. KIRK GORDON: Janice, you indicated that you received a lot of complaints apparently regarding lawn care companies. What kinds of things are you talking about... in terms of sloppy applications, something of that nature?

MRS. JANICE HARVEY: I can give some examples if you like. In one case an angry homeowner ran across the street in a gale, it was blowing very hard and told a young man who was about to start spraying a neighbor's lawn that if he didn't stop that the Environment Department would be called.

The fellow said "Well, I'm just following orders", this very windy day. And the homeowner said well you go in right now and call your employer and tell them that I'm going to call the Environment Department, the fellow did and came back out and jumped in his truck and drove off.

Another story that we have heard is that the applicators in one particular instance were told not to wear protective gear because it would scare the homeowner and make the homeowner think that in fact poisons were being applied to the lawn. That's a couple of examples. There are a lot of others.

MR. KIRK GORDON: OK, That's fine, thank you.

MR. MICHAEL SPRAGUE: On the information, the feedback system that you propose, do you mean to that to be feedback to the individual who has made a recommendation or would you like to see that published publicly or ...

MRS. JANICE HARVEY: No, I think to the individual who has made the recommendation, a personal response to the particular brief that that individual has presented would be adequate with access available you know to anyone else who would like to see it but I think the obligation was first and foremost to the individual who's presented the brief in the first place.

CHAIRMAN: And you understand that the Board is an Advisory Board. We do not issue the permits. The Minister does so. A number of these would have to come from the Minister.

MRS. JANICE HARVEY: As I understand that the Board will pass these recommendations on to the Minister for consideration.

CHAIRMAN: Certainly. There was a number you used for my own sake, lawn care industry is a $1.5 billion industry. Is that in Canadian, is that in Canada?

MRS. JANICE HARVEY: That's American, in North-America.

CHAIRMAN: It seems like a good business to get into.

MRS. JANICE HARVEY: I think that's the point. It's a very lucrative business.

CHAIRMAN: Were there any more questions from the members of the Board? Would you entertain questions from the Board? We have time for a couple of questions from the Board.

MR. STEVE MILLER: You quoted the use of a horticulturalist or a turf expert for his comments with regards to application times and turf technology and you've quoted the two week delay period. Have you done any further research to come up with concrete data or recommendations with regards to proper turf practices and with proper application delay times for going on a property after.

MRS. JANICE HARVEY: Well they're two separate things, I think. I consulted a commercial nursery expert. Someone who runs a nursery in Fredericton and talked to him at great length about the proper lawn care, lawn management approach. And my impression was that that information is available through nursery operations and I didn't go any further than that.

Certainly that is a manner in which this individual does business through the use of an integrated pest management system with the judicious use of herbicides at a very low level and appropriate timing and that sort of thing. And I wasn't about to question the man's knowledge of those simply because that's his business as opposed to being a pesticide applicator.

As far as the two week delay period, as I say that figure has, we've arrived at that figure as a result of a rather exhaustive literature review on the whole issue of the application of pesticides in urban areas. And that is a compromise between the two extreme positions that we saw in the literature.

The question of course that makes that delay period somewhat controversial is the whole area of scientific uncertainty. And do you weigh on the side of caution or do you weigh on the side of optimism? And that has to be a value judgement.

The point is that there is a great deal of scientific uncertainty on questions like that depending on the pesticide that you're using. For the most cases, I would say that scientific uncertainty is reigning supreme. So at some point you make a value judgement and that's the recommendation that the Conservation Council is making.

CHAIRMAN: One more?

MR. DON PALFREY: I suppose that this information that you people gathered was by phone calls from property owners.

MRS. JANICE HARVEY: Yes.

MR. DON PALFREY: Did you go out in the field yourself and collect data?

MRS. JANICE HARVEY: We did a little bit of both. We had, we actually a staff person go out on a daily run with one of the lawn care companies. We've talked at length with the lawn care companies about their operations. The response that we've gotten from citizens has occurred as a result of presentations that we've made to the Fredericton City Council and other places and the media has picked up on this and as a result, people have known that we're interested and we have gotten unsolicited inquiries and comments from people as a result of that, so...

MR. DON PALFREY: How did you obtain data for example relative to the suggestion made with regards to using too heavy a dose? How would you obtain that information?

MRS. JANICE HARVEY: That came from the horticulturalist that I consulted, and his experience.

MR. DON PALFREY: You mean he had studied these operations of these pest control operators?

MRS. JANICE HARVEY: Yes, yes.

MR. DON PALFREY: In the field, I presume, and so on.

MRS. JANICE HARVEY: And the dose, actually the dose that he is talking about is the recommended dose on the label. It's not an arbitrary dose chosen by the lawn care companies. What he's saying is that a dose half the strength of what is recommended on the label and therefore what is legal is all that is necessary. And the only way that someone would know that is if they were an experienced horticulturalist themselves.

And so the point is that the people that are doing, running these commercial lawn care companies are not experienced horticulturalists. They are pesticide applicators and therefore while they may be applying the correct dose as directed on the label, if they were more informed or more aware of what lawn ecosystems are about, they would know that that dose was not necessary. It's a matter of expertise.

MR. DON PALFREY: And of course your range is given in order to control harder-to-kill weeds and others. You have a higher range there and most lawns don't have just one weed in them.

MRS. JANICE HARVEY: That's probably the case. I think the point is that the contracts that these lawn care companies enter into encourage overuse of pesticides because the frequency of application is not regulated at all.

MR. DON PALFREY: This delay period, is that relative to re-entry for people onto the treated lawn. Is that what you're talking about?

MRS. JANICE HARVEY: Yes.

CHAIRMAN: I'm going to have to cut it off there. We've got lots of presenters. Thank you very much.

MRS. JANICE HARVEY: Thank you.

CHAIRMAN: Yes... I've been requested to ask those people when they have any questions, if they wouldn't mind to step to one of the microphones and identify themselves so that we can have it for the proceedings.

Third presenter, David Coon.

MR. DAVID COON, NEW BRUNSWICK CONSERVATION COUNCIL

The Conservation Council is New Brunswick's major environmental advocacy organization. We have a province-wide membership, and are supported by charitable donations from the public, and earned income from special fund raising projects.

One of the objectives of the Conservation Council is to advocate environmentally appropriate remedies to pressing environmental problems - such as pesticide abuse and groundwater contamination. One of the activities that we have undertaken in pursuit of this objective has been to appear before the Pesticides Advisory Board at every public hearing since its inception in the mid seventies.

Most of our briefs have contained a number of recommendations aimed at minimizing the unavoidable risks associated with pesticide use, both to pesticide users and to bystanders exposed to these toxic chemicals through the air they breathe, the water they drink, and the food they eat.

Few of these have been followed, so last year we re-submitted all of our past recommendations, and requested that you take action on them. As in previous years, there was no feedback.

The one recommendation that you have acted on in the past was our suggestion that you embark on a well water sampling program in the agricultural regions of the province back in 1979. For the records, that was Recommendation #19 delivered on December the 15th, 1979.

Though the chemicals surveyed were severely restricted in number, it is clear from your surveys that the heavy, continuous, and widespread use of agricultural chemicals has led to groundwater contamination that was thought impossible only a decade ago.

The groundwater in the Upper Saint John River Valley is widely contaminated with nitrates, presumably arising from the use of commercial fertilizers and poorly managed manure piles. Nitrates in drinking water at the levels commonly found in the wells surveyed by the Department of Health have been linked to a three-fold increase in the risk of such neural tube birth defects as spina bifida.

The insecticide Temik has been found in at least 17 wells to date by the Department of Municipal Affairs and Environment. A 1985 animal study found that Temik suppressed the immune systems of mice exposed to low levels of the insecticide. I believe this was presented last year to the Board by Concerned Parents, and this now has been supported by a human study published this year.

We do not know the true extent of pesticide contamination in groundwater because the province has not adequately monitored for these chemicals. The U.S. Environmental Protection Agency reports finding 23 different pesticides in groundwater. A 1985 California study found 17 different pesticides in groundwater resulting from conventional farming practices.

Environment Canada found 12 different pesticides in British Columbia, many of which are no longer used, but are of the very persistent variety. Between the Departments of Health and Environment, our groundwater has been monitored for only two of the pesticides that have been found in groundwater elsewhere, to my knowledge. A thorough assessment of pesticides in even a single well has never been carried out in this province as far as I know.

An Idaho study found pesticide contamination in 50% of all the wells surveyed in that state, and in 80% of the wells located in susceptible areas with permeable, sandy soils of low organic content - much like the soils, or those characteristics are similar to those found in the Upper Saint John River Valley.

The pesticides that are showing up in groundwater around North America were approved for use in the 1950's and sixties before any reasonable assessment of their long-term health effects was required. Recent research indicates that a surprising number of these toxic chemicals may have the potential to cause birth defects, genetic damage, suppression of the immune system, nervous disorders, behavioral effects, and cancer. Many have still not been adequately assessed to know whether they have long-term health effects or not.

The perplexing thing is that no action has been taken to control this serious source of groundwater contamination. To the average citizen it must appear as if the Pesticides Advisory Board finds well water tainted with agricultural chemicals in some way tolerable.

A number of factors argue for action - action that the Pesticides Control Act empowers you to recommend to the Minister of Municipal Affairs and Environment. These include documented findings of groundwater contamination by pesticides, lack of knowledge about the extent of the problem, and the public health threat posed by pesticide contamination of drinking water.

The Conservation Council urges you to recommend changes to the Pesticides Control Act and also to recommend the establishment of a province-wide program to deal with the problem of pesticide contamination of groundwater in an expedient manner.

Last year we urged action in this area, but none has been forthcoming, at least none that is visible. This year, I have included draft legislation designed to protect groundwater from pesticides. Entitled The Organic Chemical Contamination Prevention Act, it was introduced in California in 1985. I have attached that to the brief that I've submitted. The preamble reads:

1. It is the right of every citizen to drink safe, potable, wholesome, pure drinking water.

2. The health and economic prosperity of rural communities and individual farm families are threatened by contaminated drinking water supplies because of their proximity to the use of pesticides.

3. Pesticide contaminants and other organic chemicals are being found at an ever increasing rate in underground drinking water supplies.

4. The United States Environmental Protection Agency has determined that evidence of relatively localized levels of pesticide pollution should be treated as a warning of more widespread, future contamination.

5. Groundwater once polluted cannot be easily decontaminated; thus, there is considerable potential that groundwater pollution will continue long after actions have been taken to restrict application of the pesticides to land.

6. Due to the potential widespread exposure to public drinking water supplies from pesticide applications to the land and the resultant risk to public health and welfare, the potential for pollution of groundwater due to pesticide use must be considered in the registration, renewal, and re-registration process. And presumably, provincially it could be considered in the licensing and permitting process.

7. It is the purpose of this article, this draft legislation that was introduced in the State of California, to prevent further pesticide pollution of drinking water.

Just to outline a few of the provisions of this legislation which the Conservation Council feels could be incorporated into New Brunswick's Pesticides Control Act by way of amendments include:

1. a prohibition on the use of pesticides that are known to contaminate groundwater.

2. a requirement for comprehensive monitoring of wells in agricultural areas for pesticides.

3. an assessment of existing and new pesticides chemical and physical characteristics to determine their potential to contaminate groundwater.

4. a restriction on the use of those pesticides assessed to be groundwater contaminants, and on those pesticides that lack sufficient data to make this determination.

5. monitoring of those pesticides designated as potential groundwater contaminants.

6. an increase in licensing and permitting fees to fund the assessment program.

I have attached to my brief a list of 16 pesticides that are thought to have contaminated groundwater as a result of normal farming practices. Fourteen of these have been or are used in New Brunswick, but to my knowledge wells have been surveyed for only two of these pesticides.

These 16 groundwater contaminants come from a list of 57 pesticides that have contaminated groundwater as a result of spills, improper storage and waste disposal, as well as from normal use in a survey carried out in the State of California, and I have to resort to that because nothing as comprehensive as yet that has been done in Canada.

Just to quickly go down the pesticides that have proven to be groundwater contaminants presumably from normal farming practices, they include the pesticide atrazine; the insecticide aldicarb which is Temik; diazinon; carbofuran; chlordane which is an old one no longer used but very persistent; cygon which is dimethoate; the herbicide dacthal; the insecticide dicofol; the insecticide endosulfan; the insecticide lindane which is no longer in use but is one of those persistent pesticide which is still found in the environment; phorate which is also known as thimet; DDT and its breakdown product DDD and DDE - the persistence of DDT and its breakdown products surprisingly has proven to be something of the order of 25 years in a northern climate such as ours; heptachlor and aldrin both odor pesticides but very persistent; 1,2-dichloropropane which was discontinued this year in Canada but current stock can still be used; and 1,3 dichloropropane also known as Tailon II.

Interestingly enough in these studies a survey was done to determine the known long term health effects of these specific pesticides, recognizing that most of them were registered before any serious requirements were in place for an assessment of their potential to impact on long term health. And 8 of them have caused cancer in animal tests.

Four of those have inadequate data to assess their cancer causing ability; 7 have caused birth defects in animal tests; 4 have inadequate data to detect whether they do or not; 7 of them have cause genetic damage in animal cellular tests and 3 further have inadequate data to determine whether they do or not and finally 2 have been demonstrated to depress the immune system and 13 have not been adequately assessed for this.

Overall, as I mentioned, only 2 of these contaminants to or pesticides to our knowledge have been surveyed for New Brunswick's well water. In the case of Temik, the Department of Environment I understand has detected Temik and 17 out of 92 wells surveyed and in the case of phorate, a companion of insecticide Temik, 2 out of 2 wells showed phorate contamination.

Contamination of underground drinking water supplies is only one of the problems resulting from years of heavy, continuous pesticide use. While the kind of legislative action that I have recommended will, if enacted, go a long way towards protecting groundwater from pesticides, we must develop long term solutions to reduce pesticide use to maintain the health of our agricultural industry and our citizens.

To this end, the Conservation Council held a workshop on implementing low-chemical farming practices in April of this year. The primary objective was to bring together representatives from the farm community, government, academia, and the environmental movement to identify strategies that could lead to the increased adoption of low chemical farming techniques and technologies.

A remarkable level of consensus emerged during the workshop. It became clear that if farmers are ever to significantly reduce their dependence on chemical pesticides and fertilizers, they must be provided with the appropriate information in a forum and venue that meet their needs. Further, they must be afforded the opportunity to take this information and experiment on their own farms without bearing the attendant financial risks.

To this end, the Conservation Council has recommended to Agriculture Canada and the Provincial of Agriculture and would urge the Pesticides Advisory Board to support this, that the Canada-New Brunswick Agri-Food Development Agreement be used to fund a sustainable agriculture demonstration program.

Such a program would provide financial support to farmers for the express purpose of demonstrating low chemical farming practices, and developing related technology transfer programs.

The Canada-New Brunswick Conservation and Renewable Energy Demonstration Agreements, which was administered by the New Brunswick Energy Secretariat now Natural Resources and Energy could serve as a successful model on which to pattern such demonstration programs.

Experimentation must begin at the farm. Farms are living laboratories for alternative pest control practices, where the experiments must meet the strictest standards, that of commercial success. The general principles of biological management are well established, but the details are not.

These details will vary with each location, each farm, and over time. Each farm must be treated as an experiment, and each farmer as an experimenter. The role of government should be to stimulate the farmer to experiment, to assist in the observation and interpretation and communication of those experiments, and to formulate the general principles.

I am including a copy of the report of the Conservation Council's workshop on implementing low chemical farming practices along with a copy of this presentation, although only two of you got it because we didn't, we couldn't afford the photocopying cost.

I would like to close my presentation by quoting from a letter sent by the National Farmer's Union, in fact a potato farmer from Victoria County on their behalf to former Health Minister Charles Gallagher about the contamination of groundwater by pesticides just after the Department of Health released its findings back in 1985, and I quote:

> "Ignoring this problem will not make it go away. Farmers are not interested in poisoning the groundwater, but thus far, most are unaware of the effects of agricultural chemicals on groundwater, although there has been ample opportunity to advise them through newsletters and agricultural extension workers. Farmers also need to know of alternatives to present practices. There are simple things that we, as farmers, may be able to do on a voluntary basis to improve the situation, but first we need to be given the facts on the implications of present practices.

We are not the designers of the technology we are using, nor are we its masters. Based on this, we are interested in finding the best possible system for agricultural production in New Brunswick from the standpoint of producing healthy nutritious food and protecting our environment."

Thank you.

CHAIRMAN: Are there any questions from members of the Board?

MR. SANDY PERLEY: I just have a point of clarification. The conventional farming practices that you're talking about are basically western practices under irrigation and that's not standard here. There is somewhat of a difference there.

MR. DAVID COON: It's true but as I said unfortunately that was the only comprehensive survey that I was able to lay my hands on. There is nothing in Canada at this point.

CHAIRMAN: There was one statement that you made. Page 3 you said "the thorough assessment of pesticides in even a single well has never been carried out in this province as far as I know." What purpose would that serve to have one well look at all the pesticides?

MR. DAVID COON: It would be an inexpensive way perhaps since I know that the Department is so strapped for funds to assess in fact the extent of pesticide contamination. In other words, what sort of variety of pesticides are showing up in a specific well. Is it just Temik or where it's being used or are we seeing 6, 7, 8, 9, 10 different pesticides in a well.

Are we saying old persistent ones that are no longer in use, are we saying those combined with new ones, and then that would tell us something presumably about the possibility of that occurring in other parts of the province or in other wells. And also, it allows one to assess better the health risks involved in drinking well water that may be contaminated by pesticides. Obviously, the health risks associated with drinking well water contaminated by pesticides that you know only has one pesticide in it when it has in fact more but you just haven't tested for them could be quite dramatic when that specific pesticide may not be of particular concern.

And of course, there's also a growing concern in the scientific community about the synergistic effects of multiple exposure to different, or exposure to multiple chemicals through an individual pathway. So if you've got more than one pesticide, then that would be important to know.

As well, the Canadian Drinking Water guidelines have a guideline for total pesticides, and if you ever want to apply it, obviously you have to screen your well for total pesticides to see where it sits vis-a-vis that guideline.

CHAIRMAN: You mentioned a number of times here that it is a very expensive business to get into in analyzing for pesticide and that the government is often strapped for money to do this. And as a result of that, the Department of Municipal Affairs and Environment has put in place a program whereby they priorize the products that they look for. Are you aware of this study and also the study on aldicarb as carried out by the Province?

MR. DAVID COON: In fact I have a copy of the study on aldicarb and of most of the other pesticides I believe that have been surveyed for. What was a little disconcerting to me was that a number of them haven't shown up anywhere I've looked in the literature as being common groundwater contaminants.

And I wonder how the priority setting goes there, I don't know the details of that but it would be interesting to know more about how in fact priorities are set. And certainly as far as the expense goes, I think the government, Cabinet is going to have to decide what its priorities are and if, perhaps it should give a little more thought to public health in this province in that vein.

And certainly the Conservation Council would do whatever we can in a public way to aid and abet the efforts of the Department of Municipal Affairs and the Environment in winning more of a substantial budget to do this kind of work.

CHAIRMAN: Myself and my staff would be very pleased to sit down with you and show you how we priorize or how we came up with those products that we did look for.

Any other questions from members of the Board? Would you entertain any questions from the floor? We have time for one.

MR. DAVID COON: Sure.

CHAIRMAN: I guess not. Thank you very much. The next presenter, Cindy Gallagher

MS. CINDY GALLAGHER

I am concerned about the use of pesticides and I'm anxious to get my water tested. I feel this is a very valid request since the government allows the use of pesticides they should feel responsible for testing the water on a regular basis to ensure health and environmental safety to people.

And for the last few weeks I've been trying to get my water tested so I just want to briefly tell you what I've been going through. On Thursday morning October 9th, I phoned Dr. David Besner and told him my concerns. That afternoon an Austin Estabrooks returned my call. He tried everything to dissuade me from having my water tested. He told me there was a health survey done in the Maugerville-Sheffield area last year. He told me that there had been a testing for chemicals of wells and sand points in that area.

He mentioned the huge cost, thousand of dollars for testing my well and who did I think was going to pay for this. Then Mr. Estabrooks proceeded to tell me to write a letter to him, stating my concerns, listing the chemical names not the product used.

He was going to take my letter to Don Ecobichon who's the toxicologist at McGill University and who's on staff with the Provincial government and he's here a couple of days a week. If Mr. Ecobichon feels my list warrants testing, then we can go from there. I can't understand this either why there isn't someone in the Province of New Brunswick that we'd be able to talk to on this without going outside the province.

So I asked Mr. Estabrooks who did the survey and the testing of the water in Maugerville-Sheffield and he told me Michael Smith. So i called Michael Smith who informed me that there has been no survey done in the Maugerville-Sheffield area and there's been no testing of chemicals done in that area. They have tested for nitrates. They found some but the levels proved OK and I was wondering what that meant too that they were OK levels of nitrates in water.

The next day, Friday October 10th, I called the New Brunswick Agriculture. I talked to a weed specialist who told me that he knows where I live and if he lived where I lived he would be very concerned. There shouldn't be any problems with me getting my water tested. He also told me that myself and my family should absolutely never be exposed to the spraying.

When such is done, I should remain indoors. Now, he knew this. I lived there 11 years, I've never been told this. And I've been in my yard with my kids while the farmers have been spraying all around my house. So anyway he understood how I felt and he agreed with this.

So on October 21st, I wrote a letter to Austin Estabrooks. It was mailed the 22nd of October. On November 20th, I called Austin Estabrooks. He sounded very optimistic. He said there was going to be a meeting next week regarding my letter. He mentioned that they had been a bit behind. Their things are getting back to normal, people had been on holidays. He asked me to call him on Wednesday or Thursday of next week. At this point, Mr. Estabrooks had my letter for four weeks.

So I called him the next Friday November 28th. He still had my letter. It was five weeks at this time. He hadn't talked to Don Ecobichon. He mentioned again that this was going to cost thousands and thousands of dollars to have my water tested. I said I thought he was giving me the sham and he said he no he wasn't reneging on this but what he was going to do on that Friday of last week, he was taking my letter that morning to Mr. Ron Hicks who would be talking to Mr. Ecobichon and be looking into my concerns.

So yesterday morning, December 1st, pardon me yesterday afternoon, I called Mr. Ron Hicks who still hadn't received a copy of my letter but had talked to Mr. Estabrooks. He said he would talk to Mr. Ecobichon next week, next Monday afternoon in concerns with my letter and he would get back with me.

My mouth is so dry, I can't talk. I hate this, ah gee.

CHAIRMAN: You did well, thank you very much.

MS. CATHY GALLAGHER: Yes but the point of it is really I shouldn't have to have a letter sitting on somebody's desk for five weeks. That really wasn't fair and about waiting you think they always...

Thank you. The TV is not here is it?

CHAIRMAN: No hidden camera.

MS. CATHY GALLAGHER: Oh yes good. No that was getting pretty bad. Anyway, and then there was Mr. Hicks. His name was mentioned tonight and I just wondered if I could use names. So it's sort of in Mr. Hicks' hands right now but I still was going through with my talk.

MR. DON HICKS: I assure you that Monday it will be discussed with Dr. Ecobichon.

MS. CATHY GALLAGHER: I know it will. I knew that when I talked with you yesterday. All right, thank you.

CHAIRMAN: Donna Mulherin?

MRS. DONNA MULHERIN

Mr. Chairman, Members of the Board. First of all, I'd like to say that I'm from Grand Falls and that's the centre of the potato belt.

Concerning the issues of toxic and hazardous chemicals being sprayed in rural areas, this is a serious issue regarding the health and safety of the community. These chemicals are being sprayed too close to residential areas. In our case, our bedroom lies 3.5 metres from a potato field which is being heavily sprayed with pesticides and top killers. Our kitchen is 7 metres from where the sprayer turns.

The drift from the spray during top killing time has covered our clothes on the clothes line and has proven to be a health hazard to me, myself, who had to be treated at an outpatients in Grand Falls for a serious breathing problem that developed during such a spray.

Seeing that our water supply is from a well, we feel that it may become contaminated, as these potato field slopes towards hour house, and the run-off runs very close to our well.

May we propose that the use of these chemicals be limited to within 30 metres of any residential home, and that the law be strictly enforced.

CHAIRMAN: Thank you. Are there any questions from members of the Board?

MR. SANDY PERLEY: How come that field is so close to your house?

MRS. DONNA MULHERIN: Because I have a very small backyard. When the Trans-Canada went past, they moved our home back and it left us with a very small backyard. So the potato field is right there.

MR. SANDY PERLEY: It's very unusual to have it that close.

MRS. DONNA MULHERIN: And it is not being used with caution we feel.

MR. SANDY PERLEY: Have you talked to the farmer involved?

MRS. DONNA MULHERIN: To an extent.

MR. SANDY PERLEY: That might be the easiest way to do it if you have, that's another story.

MRS. DONNA MULHERIN: No it isn't in our case. We can't correspond with the neighbor he just doesn't listen to us.

MR. KIRK GORDON: This is ground spraying?

MRS. DONNA MULHERIN: This is ground spraying yes. And I had to go to the outpatients. I had a very bad problem with my breathing. The doctor that was on call, he had to call the emergency in Edmundston, to see how to treat me.

And also, I had clothes that were on the line. I had coloured sheets and some of the things were white. When I brought my clothes in, I could see it on the white things. But had I only coloured sheets on the line, I might have not noticed it.

We would have put those sheets on our bed and perhaps slept for 4 or 5 nights or a week on those sheets not knowing it was there. And we feel too that we would like our water to be tested for chemicals, very strongly. The field are sloping, a large slope and it comes directly to our well.

CHAIRMAN: Perhaps after, I'll get your phone number and if you wouldn't mind someone from the department get in touch with you and we could look into this further.

MRS. DONNA MULHERIN: OK.

CHAIRMAN: OK. Are there any other questions from members of the Board? Would you entertain questions from the floor?

MRS. DONNA MULHERIN: Sure, sure.

CHAIRMAN: Can you use one of the ... can you pick them up there?

MRS. DONNA MULHERIN: I can't hear you.

MR. CARL HARVEY: The question that I have, is can you find out the name of the chemical. I'd like to find out what would cause this much difficulty.

MRS. DONNA MULHERIN: Well, it's a top killer. They were killing potatoes at the time.

MR. CARL HARVEY: I know I've got it on my fingernails right now. A top killer. I mean if it's ... I'm concerned, as a user, I mean I'm concerned about my neighbors and my grandchildren and everybody that lives around me. The other question, who was there first, you or the farmer?

MRS. DONNA MULHERIN: Well, I was there. We've been there for 31 years and this particular farmer has been there 5 years.

MR. CARL HARVEY: But the land was there and it was as you said potatoes. OK.

MRS. DONNA MULHERIN: But there was a lot more caution and respect shown previous to this. Or we felt there has been.

MR. CARL HARVEY: Yes, OK. This is what I was...

MRS. DONNA MULHERIN: Do you feel 30 metres is unreasonable from a residential home?

MR. CARL HARVEY: I feel that if I'm close to any residence when I'm spraying, I would do my very best to have, if there is any wind at all, do it when the wind is away from the house. And the distance isn't as important as the movement of the air because these chemicals which we're talking about which I have on here now, I still have on my fingernails, they're subject to drift. It's just that, here again we come to the point of do the farmers move or do the residents have to move or do we need further rules in a setback of building lots from farm lands.

Because they don't make that farm land anymore. Residents can go to land that is not suitable for farming but you can't move a farm into these rocky hills and farm, you see what I mean?

MRS. DONNA MULHERIN: So in other words, you're suggesting that we move from our home?

MR. CARL HARVEY: No not necessarily. If you are too close and the farmer is spraying too close to you, something has to be done and it's not for me to say anything as to what has to be. I guess I'm not an authority on any of that. I guess I'm trying to find out for my own satisfaction, in my own district because this is an ongoing problem.

And I personally with my own farmers, like I have in some cases a type of crop that could be damaged by the spray that my neighbor is putting on. And my neighbor, I'll mention to him the crop that I have and he has been careful not to spray a damaging spray close to my crop when the wind is blowing from his crop onto mine. So it's drift and distance both that we have to be very concerned about. And cooperation in applying it. And also residence, I don't like to see children running around close to where I'm spraying. Thank you.

CHAIRMAN: Thank you very much. This brings us to coffee break. Perhaps we can be back at 8:45.

****

CHAIRMAN: A little bit late but it was still very tasty. Our first presenter after coffee break is Robert Spurway.

MR. ROBERT SPURWAY, CHAIRMAN OF THE MARITIMES SECTION OF THE CANADIAN INSTITUTE OF FORESTRY

Mr. Chairman, Members of the Board, Ladies and Gentlemen. I would like to introduce myself as the Chairman of the Maritimes Section of Canadian Institute of Forestry which I'm representing this evening.

The Canadian Institute of Forestry has prepared a policy on the use of chemical pesticides in forestry, copies of which I have presented to the Board and I do have some additional copies here should you wish same. I don't have copies for everybody but if you so wish and I don't have, I will make arrangements to get.

The title of this presentation is the Use of Chemical Pesticides in Forestry.

In the preamble, Canada's forests must be renewed and protected if they are to continue to provide the basis for a significant part of the economy.

At the present time, chemical pesticides are required to free young conifer forests from competition and protect forests and tree nurseries against insect and disease pests.

The Canadian Institute of Forestry has prepared this policy statement on the responsible use of chemicals in forestry.

Allow me to say, the Canadian Institute of Forestry is a national organization, non-profit.

We are professional people, working in government, industries, academic and consulting fields. Our members use their education, training and experience to help manage the forests of Canada.

Through the Canadian Institute of Forestry, we work with a common purpose: to achieve more intensive management of a resource that is of great importance to the well-being of all Canadians.

In that connection, very briefly, I don't want to take a lot of your time going over a lot of figures. But I think we should emphasize that the demands being made on our forests in Canada today and New Brunswick in particular are increasing considerably and this is the cause of the needs, the socio-economic needs of people and at the same time, it provides the source of employment for a large number of people. Particularly, I think you're well aware in New Brunswick.

In 1980, the Canadian Council of Resources and Environmental Ministers (CCREM) endorsed a Canadian harvest level target of 210 million cubic metres by the year 2000. This is an increase of 35% over the 1980 harvest level.

This would employ an additional 75,000 to 100,000 people, it would increase sales of lumber and fibre by $22 billion, and tax revenues by $22 million, by $1 billion, I beg your pardon. I get mixed up with million and billions, I can never get them straight. It's beyond my comprehension.

Among the many problems requiring attention, two are of immediate concern. First is to satisfactorily re-stock the 26 million hectares of forest land currently under stocked or carrying only brush species, and to stop further additions to this backlog.

The second is to reduce to acceptable levels, establishment, growth, and mortality losses caused by forest insects, diseases, and competing vegetation, which together are conservatively estimated to reduce forest production by some 100 million cubic metres annually.

Techniques are currently available to address two major problems in intensive forest management noted above, but because they involve the use of pesticides including herbicides and insecticides, implementation is being severely constrained by political reaction to strong resistance to their use by environmentalist and other public interest groups. Until continuing research can provide viable alternatives to chemical pesticides, foresters are dependent upon them to achieve many forest management objectives.

Without their availability, it is certain that forest production goals set for the year 2000 will not be met; the annual allowable cut from productive forest land will be decreased, and the viability of the forest industry will be substantially reduced.

Given this scenario, the contribution of the forest industry to the socio-economic needs of this country will not be sustained or enhanced to the obvious detriment of future generations of Canadians.

The Canadian Institute of Forestry is vitally concerned about this possible future loss in forest productivity and recommends the following policy concerning the use of forest pesticides.

The Canadian Institute of Forestry supports the forest harvest level target of 210 million cubic metres for the year 2000 endorsed by CCREM, and in so doing, supports institution of such intensive forest management practices throughout Canada as will be required to achieve this target.

Secondly, the Canadian Institute of Forestry recognizes that destructive forest insects, diseases and competing vegetation seriously reduce the fibre yield of our forests and have detrimental effects on other such values as aesthetics.

It realizes that pest management is an important and integral part of intensive forest management, and therefore, supports the use of carefully executed and environmentally conscious pest management practices where these are required to achieve accepted forest production goals.

Three, the Canadian Institute of Forestry is aware that chemical pesticides are the major tools available today to reduce the losses caused by forest pests in an effective and economical way. It, therefore, supports responsible use of registered chemical pesticides in forestry practices.

The Institute strongly supports continuing and careful monitoring of pesticide use in forestry aimed at detecting human health effects that might develop through their continued use.

The Canadian Institute of Forestry strongly supports continuing, in-depth research on forestry use of pesticides aimed at the development of more effective and environmentally benign pesticides and technology for their use which will reduce the chances of adverse human and human health effects.

Seven, six rather, the Canadian Institute of Forestry strongly encourages and supports continuing research on silvicultural and biological control of forest pests, which will reduce forestry's current reliance on chemical pesticides.

The Canadian Institute of Forestry supports existing regulations limiting the application of forest pesticides to licensed applicators. The Institute supports initiatives designed to increase public awareness of pesticide use in forestry and public input into planning processes for the operational use of pesticides in forestry.

Lastly, because pest management is an important and integral component of intensive forest management, the Canadian Institute of Forestry is supportive of increased activity in pest management training in all undergraduate forestry and technical schools in Canada. This was approved originally in 1983 and revised in March of this year. That is my presentation.

CHAIRMAN: Thank you very much. Are there any questions from members of the Board? Item number 6, the Canadian Institute of Forestry strongly encourages and supports continuing research on silvicultural and biological control. To what extent, could you give some examples or to what extent would the CIF support this type of biological research or biological control?

MR. ROBERT SPURWAY: In my, to my knowledge and it largely has been in the area from insecticides as far as I know, Ladies and Gentlemen, with the use of Bt. Silviculturally, I can't give you an example I'm afraid.

I think it would depend on chemicals or in some instances, silviculture practices can be done by motor manual means, you know brush soil and this type of thing. But on certain conditions, on certain scales too.

CHAIRMAN: OK Thank you. Would you entertain questions from the floor?

MR. ROBERT SPURWAY: Yes.

CHAIRMAN: Are there any questions from the floor. Yes, identify yourself please.

MR. JOE RIDEOUT, FEDERATION OF AGRICULTURE: You mentioned that this objective of a 35% increase, I think somewheres in the period of the year 2000 could not be met. I've heard remarks by professional foresters in the last year or so indicating that early in the next century that we will be going into a period where we will have reached our maximum. In other words, there'll be sort of a stand down in the cutting process because the new stuff coming on, there'll be a gap there in other words and it's a general consensus that that's going to happen. So in that case where there's going to be a stand down in production, for a period until we get the reforested areas coming on, how significant is it if you don't reach that projected figure? To me it will not be that significant.

MR. ROBERT SPURWAY: I think the significance there is going to be felt with the population. I mean we're going to find our mills operating at well below their capacity. This in turn will affect the economy. I'm thinking in terms of New Brunswick. There was this period where we're concerned that in the early 20 hundreds we will not have the timber mature enough to meet the needs so that there is that very distinct possibility. I know, listening some of my colleagues on this, they are concerned that we're going to see a downturn, a levelling as it were.

MR. JOE RIDEOUT: Yes, my point is that if we know there's a stand down time coming, what is really the risk then in not reaching your goal of 35% increase. In other words, if there was a real risk in the use of certain chemicals, what would be the real advantage inof taking that risk if you know there's going to be a period of lull early in the next century in any case, regardless of what happens.

MR. ROBERT SPURWAY: If I understand your question, we are trying to offset as much as possible. I mean if we look down the line and we look at our forested area and say all right well now we have an area here in terms of age class structure of the forest such that.. But, with the aid of intensive management and this involves the use of chemical pesticides, we can bring this on to meet that need. That's essentially ...

CHAIRMAN: Thank you very much.

MRS. JANICE HARVEY: I have one question but I would like to register for the record a prediction that in fact I don't think we're going to see much difference in forest yield with or without the use of pesticides. We're probably going to run into shortages regardless and I think that might have been the point that Mr. Rideout was trying to make.

I would like to ask Mr. Spurway or anybody else in the audience, if there's any, if anyone knows what the comparative investment in research in biological alternatives to pesticides versus chemical pesticides might be.

MR. ROBERT SPURWAY: You got me there, I can't answer that.

MRS. JANICE HARVEY: Anybody else know? The impression I get is that we're not moving fast enough towards alternatives because the investments are not being made that might be made.

CHAIRMAN: By that you're looking for a number... You mean what industry is spending on biologicals as opposed to what they're spending on chemical insecticides for forestry or the government, or?

MRS. JANICE HARVEY: Yeah. I mean where research is being done, whether it's being done in the private sector, the public sector, non-profit organizations like the CIF. I'd be interested in knowing and I think it would be interesting for the Pesticides Advisory Board to know the breakdown on where research money is going and that I think would be a telling picture.

CHAIRMAN: To the research money for manufactures or from government. Thank you very much. No more questions? Thank you Bob.

MR. ROBERT SPURWAY: Thank you Mr. Chairman.

MR. KEITH BOWSER, FRASER INCORPORATED

Mr. Chairman, Members of the Board, Ladies and Gentlemen. We again appear before you at your annual hearing to express some of our views as a major forest industry of this province, that is as an owner of two lumber mills and two pulp mills and 50% ownership in a waferboard plant. We employ approximately 2500 people in the province.

We are a forest land owner and manager, and a user of two types of pesticides in our forest management program. I'd like to add that although officially I am serving as a spokesman for and a presenter of the brief for Fraser Inc., unofficially as a forester, I have a deep personal interest in growing things, among them and especially, trees.

We feel it is appropriate, as we have done before, to report on the scope of our operations and our use of pesticides in the past year. We manage approximately 760 000 ha of forest land; 60% of it Crown Land under a Forest Management Agreement with the Province and 40% - freehold land, owned by the Company. We will report on our freehold land only, because all forest protection operations, that is against fire and pests on Crown Lands, are carried out by the Province.

In 1986, we treated almost 34 000 ha for budworm control. The chemical insecticides fenitrothion and matacil were used on about 98% of this area and 2% of the area was treated with Bt. The spraying was carried out by Forest Protection Limited at our cost.

More and more attention is being paid, as it must be, to spaced stands. That is stands of natural regeneration, which have grown to a certain height and we have spaced the trees out. These stands have natural reproduction. Most of them have a high balsam fir content because they are natural reproduction and they are vulnerable to budworm feeding. And the advantages to be gained from spacing can be totally nullified if foliage is not adequately protected.

Herbicides - This year we treated 2 970 ha of spruce plantations and 175 ha of natural softwood reproduction with the herbicide Roundup being used at a rate of 4.2 litres per ha of active ingredient mixed with 33.3 litres of water per ha. Plantations we have treated range from 2 to 3 years of age. To put the scope of the operation in perspective, we had approximately 4 100 ha of plantation in this age range. This year we planted another 2 300 ha. The area treated with herbicide this year represents about one percent of our total freehold land area.

In our region of the province, the northwest, every plantation requires at least one treatment. A proportion require a second treatment. From our short experience with using Roundup, we do not know what this proportion will be, but probably in the order of 30% to 50%.

Last year in our brief, we indicated a feeling that the use of herbicides on plantations would tend to decrease because of the effectiveness of the currently used herbicide. We still feel the same way but we cannot yet put a good number on it.

At this time, we would like to inform you that we see another potential use for herbicide that could have a favorable effect in relieving our impending softwood supply problem. First, some background. You may be aware that over the past six or seven years a complete forest inventory of the Province has been carried out. And over the next year, new forest management plans will be made from this new inventory data for all of the Crown Land and the major freehold lands in the Province.

We at Fraser are just beginning to analyze our inventory data, but our initial feelings are that the possible future wood shortage we predicted in 1982 is "for real" and that we are going to have a shortage in terms of the needs of the mills presently in place. A frequent reaction and quick answer to this dilemma is "more planting".

However, we always have to remember a truth which we quote from Dr. Gordon Baskerville, I believe said this first: "Every tree that we will harvest in the next 40 years is already out there".

Current planting levels do two things for us. Indirectly they allow us to harvest a limited higher level now because of the greater productivity of plantations coming on stream in the future; directly they only begin to contribute to the wood supply beyond the year 2020. So what have we got out there now which could make a contribution to wood supply in less than 40 years? We have a significant area of natural softwood regeneration.

Currently, spacing is being carried out in this young forest as it reaches a height of approximately 2.5 metres. It has required 15-20 years for this naturally regenerated fir and spruce to fight its way up through the same competition that we strive to control in our plantations, that is raspberry, wild cherry, and to a lesser extent, poplar, soft maple and birch.

In our forest management procedures following a harvest, a survey is made to arrive at a silvicultural decision of whether to plant or not. If the stocking of advanced natural softwood is 60% or better, the area is not planted. In our softwood producing areas of the northwest, this can amount to as much as 40% of the areas harvested.

Five years after the harvest, we return to these areas for another survey, to verify the original decision and to place each area on a "development track" in our forest data bank. The prognosis may run like this: Five years has elapsed; another 10 to 15 years is required to fight the competition and attain a height of 2.5 metres.

Following spacing, we can assume another 25-30 years for the spaced trees to grow to a merchantable size. So, we are looking at a total of 45-60 years from one harvest to the next. I'd like to zero in on that first 20 years of competition and think of the growth rate of those softwood seedlings. If we assume a height of 30 cm at the start and a height of 2.5 m at spacing time, it has required 20 years to grow 2.2 m which translates into about 11 cm of growth per year average.

As we said at the beginning we feel there may be an opportunity here to shorten the competition period with the use of herbicides. In the wood supply situation that we are facing, time is as critical a factor as merchantable volume.

Even five years of growing time saved in the early years by judicious use of herbicides could make an appreciable difference. As we formulate our new management plans we are seriously considering the possible advantages of this management strategy, and in fact we have treated 175 ha of natural regeneration this year. We will be closely monitoring these areas to assess the results.

We would now like to address a concern we sometimes hear when we are discussing herbicide use. A question sometimes asked is "Are you trying to kill all the hardwoods to grow softwood?" Let us assure you, we are not. Even in face of the fact that in general, hardwood tends to occupy a disproportionate share of the best soil types in the province -- "high sites" -- we call them in our forestry jargon.

We are also accused of attempting "stand conversion", another piece of trade jargon which means radically changing the species composition after harvest. What we are trying to do is prevent some of mother nature's stand conversion to more hardwood, and it is a battle for us to maintain the status quo on softwood producing area.

I had hoped to get an overhead here to hook a chart up so I'll have to go without it I guess. We look at a simplified stand classification of four hardwood/softwood relationships in natural stands. We'll see... I'd like to define them for you. First, the way we look at them, pure hardwood, hardwood/softwood, softwood/hardwood and pure softwood.

Pure hardwood means containing more than 75% hardwood by volume. Hardwood/softwood contains between 50% and 75% hardwood by volume. Softwood/hardwood contains between 25% and 50% hardwood by volume. And pure softwood less than 25% hardwood by volume.

An area summary from Fraser limits in 1982 show that 15% of our total area was occupied by pure hardwood, 16% by the next category hardwood/softwood, 17% by softwood/hardwood and 37% by softwood. We draw the great majority of our present softwood supply from the third and fourth categories, that is stands that contain 50% softwood or more. More often than not, we can only enter the second category, hardwood/softwood if there are also sufficient hardwood sawlogs to make an economical total harvest volume.

If left to nature after the harvest, category 2 - the softwood/hardwood mix, no the hardwood/softwood mix I'm sorry, will revert to pure hardwood after harvest. And this is OK with us. What we wish to prevent is what happens in the other two categories, three and four.

Approximately half of number 3 will revert to number 2 i.e. more hardwood and over 50% of the softwood category will revert to number 3 or a mixed category. When this happens, our softwood growing land base is eroded, and we have seen this happen over time when we leave things entirely to nature. Therefore, we should understand that all this talk about reducing or eliminating hardwood is not about areas which are pure or nearly pure hardwood to start with. It is about maintaining our present softwood growing sites.

I'd like to cover the procedures that we go through in pesticides use. We know that the Board is well aware of the planning and procedures, but we felt that a brief description of what we do at home would be of interest to others.

Insecticide Operations. Each summer immediately following the larval feeding season, the Province carries out a province-wide aerial survey to assess the current year's damage. On our part, we supplement this survey on our freehold land, and the regional Natural Resources staffs do likewise on Crown land. This is to verify the general survey and to take a closer look at some specific areas of concern.

Defoliation maps are prepared, showing areas of significant defoliation. Following the hatch of the larvae from the eggs laid in July, ground sampling of larva populations is carried out through the fall, and this information is combined with the defoliation results to prepare hazard maps.

The hazard for the following year is therefore based on the current year's defoliation level; the existing larval population, plus the defoliation level of the immediate past year and an assessment of the vigor of the trees. From this, the spray plan is developed for the following spring. Any stands to be harvested in the next three years are eliminated from the program.

However, young stands which have been spaced are brought into the treatment program with a lower level of larval population than the older stands. Our objective is to save 80% of the new foliage on spaced stands as compared with 50% to 60% on the older stands. Once our plan has been prepared, the actual operation is carried out by Forest Protection Limited under a permit obtained by them from the Department of Municipal Affairs and Environment.

As the over mature stands are harvested, the forest becomes more and more broken up and there become fewer and fewer blocks large enough to treat with large aircraft. At the same time, the grand total area treated tends to shrink. However, the logistics of treating more and smaller blocks becomes more demanding for the planners and operators. Recent developments in techniques of mapping, sampling, spraying, etc., have all aided in coping with our changing protection problem.

The trend of decreasing populations over the past three years or so should remind us that this has happened before and we should not be lulled into a false sense of security. Appropriate adjustment and reaction to low population levels provide opportunities to prevent sudden increases in populations which we have also witnessed before.

Regarding our herbicide operations, each year in September, plantations in the 0 to 4 year range, which are not being treated in the current year, are surveyed and assessed for need of treatment the following year. A preliminary treatment plan is prepared during that fall. The following summer in late June and early July when vegetation growth is at its peak, all these plantations which were judged borderline cases are reassessed and inserted into, or rejected from the program which begins approximately August 1st.

Although the Fraser herbicide program uses contract aircraft, all the chemical is purchased, mixed and loaded by our people and the spraying aircraft's pilot is under direct radio control by our supervisor. We strictly adhere to the conditions of the Department of Environment permit which includes mixing procedures, protective clothing for workers, container disposal, etc.

We also cope with members of the public who may be temporarily delayed as they pass by our operations on the way to fishing or whatever. Our key people have had formal training in their job and possess applicator's licenses. The cost of the chemical itself represents the major portion of the total job cost and we are therefore very careful in how we handle and apply it.

Finally, we would like to comment on one more item. In mid 1985 the Federal Department of Agriculture created a Pest Management Advisory Board in response to public demands for, quote: "meaningful participation in the pesticide regulatory process". This Board is now functioning and last summer we received a copy of a request to comment on the subject of public access to information pertaining to pesticides. In some instances, the public's desire to know may come in conflict with the manufacturer's proprietary rights as inventors of the formula.

In those instances the public's "right to know" should not include the right of access to proprietary data. This highly technical data should be interpreted for the public by highly qualified specialists of the appropriate government departments. We feel that the level of information that is adequate for the use of both the public and the user is exemplified in the "forest awareness" technical reference bulletins produced by the Forest Protection Committee of the Canadian Pulp & Paper Association.

Regarding the Board's question, in the letter they sent out in the summer as to the approaches in developing an effective consultation process, we are in favor of the approach of the "Consultative Committee".

Full and complete participatory democracy in all things would be an ideal state of affairs in theory. However, in practice, there is a grave danger that the system would completely bog down. At some point in any process, decisions need to be made. The final decisions can only be made by very few, but hopefully in an objective and factually informed environment rather than in an emotionally charged forum.

Thank you.

CHAIRMAN: Thank you very much. Are there any questions from Members of the Board?

MR. KIRK GORDON: Mr. Bowser, you indicated in your budworm program on your freehold land a 98% use of chemical pesticides and 2% with Bt. Who makes that decision as to the portions to be used in that program? Does your company make that decision or is that a choice by Forest Protection Limited?

MR. KEITH BOWSER: No, our company makes that decision.

MR. KIRK GORDON: Is there some reason why perhaps you have not gone with a higher percentage of Bt in the past?

MR. KEITH BOWSER: Two reasons, the first being that our confidence level with Bt is not as high as it could or maybe should be yet. The second one is cost. We, through the various contacts we had with researchers and so on, we keep close track of what's going on in Bt research. There's a lot of research going on with the use of Bt and I guess I would have to say that when we feel that we have more confidence in it, then we will probably use more. But there are two or three features about it that still bug us. The window as they call it is very narrow and short. That is you only have a very short period of time in which you can apply it and have it effective because its life on the foliage is short compared with chemicals.

MR. KIRK GORDON: OK, Thank you.

CHAIRMAN: Any other questions? Would you entertain questions from the floor?

MR. KEITH BOWSER: Yes.

CHAIRMAN: Are there any questions from the floor? Yes? Perhaps you could go to the microphone please.

MR. DAVID COON: Keith, does Noranda operate in Ontario or Quebec? Do they have freehold land there?

MR. KEITH BOWSER: To my knowledge, there is one Noranda forest company and it is in Quebec. And they own some freehold land but I don't have any idea how much?

MR. DAVID COON: My question was what they use for pest protection if you knew?

MR. KEITH BOWSER: I'm not familiar with their operations at all. Maybe I should be but I'm not.

MR. DAVID COON: OK, Thank you.

CHAIRMAN: Thank you very much. Our next presenter, Steve Miller.

MR. STEPHEN MILLER, PROFESSIONAL AGRICOLOGIST AND VICE-PRESIDENT OF LAWN MANAGEMENT

Mr. Chairman, Fellow Committee Members. I don't have a formal presentation to make to you as I'm doing this on an ad hoc basis. My name is Stephen Miller, I'm a professional agrologist and I'm vice-president of Lawn Management, one of the lawn spray companies in town.

There are several points that I would like to bring to the Board's attention, to the Committee's attention, in the interest in seeing that the correct information is passed on to the Minister. Not all lawn care operators lack knowledge. I myself have 17 years in turf grass business and I'm quite prepared to put my knowledge up against anybody in this province on how to grow grass, turf grass.

One of the previous presenters made comments with regard to an expert horticulturalist in the business of turf grass. My only comment to the Committee, is that in my experience in the 15 of those 17 years were in the golf course business, the golf course people are noted as being the leaders in the turf grass industry in this country.

You could take 12 golf course operators, the best 12 in this country and put them in a room and they'll come up with 13 ways of what is the correct way to grow grass, correct application times, various products, etc.

With regards to the area of timing on going onto a property, what I would like to see if the Board, if the Committee is giving any recommendations to the Minister, that any decisions be based on fact. There has been a study at the University of Guelph on pick up of chemicals. In particular two of the chemicals, one was diazinon, the other was durzban, and they found that within 24 hours you're down to less than 1%. I do believe a member of the Department of the Environment has that study.

So whatever decisions are made with regards to return time on a property, I would ask that that be made on definite fact. The rate of application of chemicals is recommended by the federal government or is recommended by the manufacturer, approved by the federal government under licensing.

If those rates are incorrect, I would suggest that the course of action is to go back to the federal government and have them redo their specifications. I don't think you should be tinkering around with rates in the field on an ad hoc basis.

Thank you very much.

CHAIRMAN: Thank you. Are there any questions from members of the Board? Would you entertain questions from the floor? Are there any questions from the floor?

MR. DAVID COON: I was just wondering if you would have any objections to posting notification signs on lawns after your company had treated them?

MR. STEPHEN MILLER: No, I think it's a great advertising tool.

MR. DAVID COON: Thank you.

CHAIRMAN: Any other questions? Thank you very much. Cathy Richards, Concerned Parents.

MRS. CATHY RICHARDS, CONCERNED PARENTS

My name is Cathy Richards and I'm here as president of the Concerned Parents Group which has been in existence for a decade now because of concern about the health hazards associated with chemical pesticides. Our concerns have not gone away; we will not be repeating them all in this brief, but we wish to emphasize that the material presented in our eight previous appearances before this Board remains relevant.

In this brief we wish to focus attention on the need for greater public information about chemical pesticide use in New Brunswick, and on how the Pesticides Advisory Board can help.

In the past six months there have been many news reports on a number of chemicals. These reports have largely come from Upper Canada and the United States. We wonder what is their relevance to us here in New Brunswick. Let's look at some examples.

Example #1: Dinoseb. Dinoseb is the active chemical in some pre-emergent weed killers and top-killers known by such names as Premerge, Sinox, DNBP, Dynannap, and Dinitro. On October 8, 1986, CBC radio reported that the Environmental Protection Agency in the United States announced an emergency suspension of all dinoseb products because of evidence that it causes birth defects and male sterility. What does dinoseb mean to us in New Brunswick?

In 1984 and 1985 alone, over 220,000 litres of products containing 73 000 plus kg active ingredient of dinoseb were sold in New Brunswick, presumably for use on New Brunswick croplands. That is more than 80 tons of dinoseb in 2 years! What do we know about where it was applied, what became of it in the soil, or in the water? Very little.

In spite of known concerns about dinoseb causing birth defects, dinoseb was not even one of the pesticides tested for in well water tests in potato growing areas in New Brunswick in 1985. That information at the very least is something the people of New Brunswick need to know.

Example #2: 2,4-D. On September 18, 1986, the Toronto Globe and Mail carried a front page story on 2,4-D which led off: "The most widely used herbicide in Canada - 2,4-D - causes cancer in humans..." The article reviewed a research report which had appeared in the American Medical Association Journal on September the 5th.

The study found that Kansas farmers who used 2,4-D more than 20 days in a year had a significantly increased risk of developing non-Hodgkin's lymphoma, a type of cancer. A second unpublished study had found brain tumors in rats fed 2,4-D.

The Globe and Mail article described 2,4-D as the backbone of all weed control programs in Canada, with Saskatchewan being the heaviest user. But what does this mean to us in New Brunswick? Do we know how much 2,4-D has been used in New Brunswick since it came on the market about 40 years ago? No, we don't.

We know it was used for conifer release, and under power lines, for decades. In the years 1984 and 1985 alone, 93,000 litres of products containing 27 000 kilograms of 2,4-D active ingredient were sold in New Brunswick, mainly for forestry, but also in lawn spray products.

In 1986 there was a great increase in commercial lawn spraying activity. Was the general public ever told that these companies were spraying chemical herbicides such as 2,4-D and insecticides such as chlorpyrifos on lawns? This information is certainly not obvious in their advertising. Many young men used 2,4-D more than 20 days this year in their summer jobs. Were they warned of any known or suspected risks? Or were they, like the SODA members in the 1960's, told it is safe?

The commercial use of products containing 2,4-D is now banned in New Brunswick, pending a federal review. The Concerned Parents Group commends the Ministers of Health and Environment in New Brunswick for taking this initiative to prevent further exposure to 2,4-D in commercial applications. We are concerned, however, that the ban does not apply to domestic uses and believe that this is an area where lack of public information can be very dangerous.

Many people do not realize that this same herbicide 2,4-D is an active ingredient in lawn products which go by other names such as Weed'n'Feed, and Killex. The labelling information is often in very fine print, and many homeowners might very well choose not to use a product if they were aware that it contained 2,4-D. In addition, we would like to see the ban extended to all other phenoxy acid herbicides.

Example #3: TEMIK. On September 19, 1986, the Globe and Mail carried a front page story which began "Temik, an insecticide used on potatoes in Canada and the United States, causes potentially damaging changes to the immune systems of people who consume low levels through their drinking water."

The story was based on a one year pilot study released by the University of Wisconsin which found that women who had low levels of Temik in their drinking water showed increases in a type of white blood cells called T8 lymphocytes that regulate the immune system's response to disease.

These findings prompted the government of Wisconsin to issue a warning not to drink water containing Temik at more than 1 ppb concentration. What does this mean to us in New Brunswick? Is our water OK? Is P.E.I. the only province that has Temik in its wells? The public of New Brunswick doesn't know. In 1984 and 1985, 9,233 kg of Temik were sold in New Brunswick. Some wells in New Brunswick's potato belt have been tested. Some have Temik in them.

Is it really OK to drink the water if it doesn't have more than 10 ppb of Temik? Or should the limit be revised down to less than 1 ppb? How do you get the testing done? How do you find an alternate supply of clean water? These are some of the questions the public needs to have answers for.

Example #4: ALAR. In the September 1986 issue of Consumer Reports there was an article entitled "Some bad news about apples and babies." It began: Babies consume far more apple products than does any other age group. Many apple growers treat their crops with a chemical, daminozide, sold under the brand name Alar. Daminozide is a suspected carcinogen".

This article was followed by a documentary report on CBC TV's Marketplace, giving essentially the same information. This chemical is used as a growth retardant to prevent apples from dropping prematurely. It is absorbed by the fruit. You can't wash it away or peel it off, said Consumer Reports. Daminozide and a related contaminant called UDMH both produce cancerous tumors in lab animals when fed large doses. What is the relevance of this information to us in New Brunswick?

Well, it is hard to determine. We know or we can find out from the Pesticide Usage in New Brunswick reports that Alar is used in New Brunswick, presumably on apples. In 1984 and 1985, 153 kg of Alar were sold here. But consumers have no way of determining which apples have been treated with Alar, and growers are not required to disclose this information.

Example #5: Budworm Spraying. On April 4, 1986, the Daily Gleaner carried a news release from the Department of Forests, Mines and Energy with the headline "Cut in Spruce Budworm Spray Area". The article stated that the 550,000 ha proposal "is a significant reduction from 701,000 has sprayed in 1985". It further pointed out that the bacterial pesticide Bt was to be applied to about 110,000 hectares, an increase from the 81,000 ha sprayed with Bt in 1985.

Thus the public was told that our budworm spray program was getting smaller and that the percentage to be treated with a biological spray was to be increased. So far so good. What the public was not told, however, was that the Bt component in the New Brunswick spray program in 1985 was a paltry 11%, and in 1986 would rise to only 20%.

In the state of Maine, however, in 1985 Bt was used in more than 80% of their total budworm spray program (134,227 out of 166,430 ha) and in 1986 they had no need for a spray program at all, as the budworm had disappeared. What the people of New Brunswick were not told was that in Ontario, in 1985, and again in 1986, only Bt was used to spray selected areas of high value timber, while the Minister of Natural Resources withstood heavy pressure from the forest industry to initiate massive chemical spray programs in northern and western Ontario because spruce and jack pine budworm were all set to wipe out the forests. A small article in the Globe and Mail on November 14, 1986 ends with these words about the Ontario government's decision:

> "It is appropriate to continue with the biological pesticide this year, in view of the results of 1985 and 1986 spray programs", Mr. Kerrio (min of N.R.) said. "A spruce budworm infestation that has plagued Northern Ontario since 1967 is declining, and jackpine budworm populations have collapsed in northern Ontario and are expected to decline in northwestern Ontario in 1987," he said.

When announcements are made about our continued need to spray our forests with chemical insecticides, results like these from other states and other provinces are something the public of New Brunswick needs to know.

How the PAB can help? We have some suggestions to make about ways in which the PAB can assist in keeping the public better informed about pesticides in New Brunswick.

According to the Pesticides Control Act, you are responsible for issuing pesticide applier's licenses, and for advising the Minister on the issuing of permits. You are also empowered to recommend changes to the Pesticides Control Act and its regulations. In our opinion the act is lacking a mechanism whereby the public can be kept informed about pesticide applications, the where, what, when, why and how.

We suggest that revisions of the regulations in Section 19 (Pesticide Operator's License, p. 6) and Section 32 (Permit, p. 10-11), could be made to provide for: notification, informed consent and justification.

For example, under Section 19(f), pesticide operators are required to keep a record of the pesticides used, including what, how much, where, rate, and registration number. In Section 19(e) they are also required to "ensure that all persons involved in the application of a pesticide are informed of the terms, conditions and restrictions of the permit governing that application."

This regulation could be expanded to include a provision to notify landowners and obtain informed consent prior to application, and documentation of this should be included under Section 19(f) as part of the records which must be kept on each pesticide used or applied.

Further, Section 32 of the Regulations lists the information required from a person applying for a permit. There are currently 10 pieces of information required. We would suggest that there also be a requirement to show proof that the owner of the land to be sprayed has either requested in writing or given written informed consent to have the pesticide applied to his land.

Thirdly, we recommend that a revision be made in the Regulations of the Pesticide Control Act so that any person applying for a Pesticide Permit or any holder of a pesticide operators license be required to show justification for the choice and use of a chemical pesticide.

And finally, we believe that the public of New Brunswick would be better able to weigh the information they receive about pesticides from whatever source if the advice which you as a Board give to the Minister of the Environment were to be made public on a routine basis.

Thank you.

CHAIRMAN: Could we get a copy of that or was there one left with?

MRS. CATHY RICHARDS: Yes, there wasn't. I didn't get a copy before 5:00 o'clock but...

CHAIRMAN: Yes there was a lot of points there that we...

MRS. CATHY RICHARDS: I'll be happy to bring you copies tomorrow.

CHAIRMAN: OK. That's fine. Any questions from members of the Board? Would you entertain questions from the floor?

MRS. CATHY RICHARDS: Yes.

CHAIRMAN: I guess not. Thank you very much. Now I'd like to hear from Mr. Don Palfrey, Crop Protection Institute of Canada.

MR. DON PALFREY, CROP PROTECTION INSTITUTE OF CANADA

Mr. Chairman I hope you won't panic, ladies and gentlemen in the audience when you find out this is an 18 page presentation. But if you had the opportunity to see it from where you're sitting you'd see that it's all double spaced so that automatically reduces it down to 8 pages and hopefully I can get through it in fairly short order.

This is a presentation on behalf of the Atlantic Council of the Crop Protection Institute of Canada. The Atlantic Council appreciates the opportunity in being able to present our brief to you this evening. We also appreciate the fact that these are annual hearings in view of the fact that with today's rapidly changing scenarios particularly in pesticide science, this affords an annual possibility of either presenting another brief or an update.

The Crop Protection Institute of Canada is the new name effective August of this year for the previous Canadian Agricultural Chemicals Association -- an organization representing the companies that research, manufacture and formulate products for the control of pests in Canadian agriculture and forestry.

The name has been changed after 34 years because technologies for the control of pests are changing rapidly and member companies are deeply involved in those changes.

A very brief summary of the organization. These companies supplies products developed to control weed, insect, fungus and other pests affecting agriculture and forestry.

There are approximately 40 companies, mainly subsidiaries of international firms here in Canada. Those international firms for the most part manufacture or formulate crop protection products. There is formulation going on here in Canada, not to the same extent of manufacturing that there is outside of the country. The membership of the Institute also includes major national and regional distributors.

As far as economic importance is concerned, without pesticides, crop losses from insect and fungus damage and through competition from weeds would reduce overall yields by no less than 30 percent and some crops could not be produced commercially. And there's research to back this data up, these figures. Herbicides provide the most economic means of managing commercial forests by eliminating unwanted species at less than one fifth the cost of manual methods.

The Canadian industry is engaged in formulation rather than in basic manufacturing, I've said that. It is responsible for satisfying federal and provincial authorities about the safety and effectiveness of every compound it offers for sale and for obtaining Canadian registration. It depends on foreign suppliers for 98% of the active chemical ingredients it uses.

The importance of the agricultural chemicals industry to the national economy rests in its role as a supplier of essential inputs to two of Canada's keystone industries, namely agriculture and forestry, and its potential to provide these industries and Canadian science with access to the new pest control technologies. These new technologies, including bio controls and genetic engineering, are being developed to replace or supplement the use of chemicals in pest management.

The Canadian, I'm sorry, the Crop Protection Institute of Canada member companies have a policy of responsible care and they encourage the responsible development, introduction, manufacture, transportation, storage, handling, distribution, use and container disposal of agricultural chemical crop protection products so as to minimize adverse effects on human health, domestic animals, wildlife and the environment. In other words, CPIC member companies encourage "responsible care".

As far as commitment is concerned, the Canadian Crop Protection Industry is committed to taking every practical precaution towards ensuring that its products do not present an unacceptable level of risk to its employees, customers, the public or the environment. The Crop Protection Institute of Canada has formally accepted these principles which are now a condition of membership in the organization.

In regards to implementation, there are committees in place to establish and monitor Institute policies and programs for each stage in the life of a crop protection product, namely, manufacturing, transportation, a committee on storage, one on use, and one on container disposal.

Now in addition to the federal, the national body, there are six provincial councils and the Atlantic council which in effect represents seven Councils in Canada, represented on the National Institute. And I have in the report there, the objectives of these Councils. They are objectives such as:

1. To implement at the provincial level, national policies and strategy.

2. To provide inputs and recommendations to the national organization.

3. To monitor proposed or pending provincial legislation and regulations and to maintain good relations with provincial authorities.

4. To act as an educational arm of the CPIC in cooperation with provincial officials or when required with federal officials.

And it goes on, and I don't think I will... That can be read and unless somebody is particularly interested I won't drag that out.

As far as committees are concerned, in addition to the Responsible Care Committees that I've already mentioned as far as the National CPIC organization is concerned, they also have active standing committees on industry statistics, patents, marketing and public affairs. And at the Atlantic Council level, they have active committees and have had for some years, dealing with container disposal, safe use, safe storage, dealer certification, public relations, forestry and technical.

Through these committees industry has made and is making meaningful contributions by ongoing grower meetings on pesticide safety, dealer certification short courses. In fact, it was the Atlantic CACA at that time as it was called that really started the initiation of dealer certification short course for the first time down here. This is before there were requirements for that type of thing to the extent there today under the Pesticides Control Act of New Brunswick here. And they support and play leading roles in meetings relative to safer storage and transportation of pesticides.

At the federal level industry is well represented by technical personnel on committees such as the Canadian Association of Pesticide Control Officials, the Expert Committee on Weeds, and the Expert Committee on Pesticides Use in Agriculture.

At provincial level, industry is represented on various provincial and Atlantic province committees as well as pesticide advisory boards in P.E.I. and Nova Scotia. I should say that Nova Scotia at least is stipulated in their newest act whether they've been appointed or not I'm not sure gentlemen so that would have to be considered.

In regards to legislation, industry has continually monitored and reviewed developing and changing legislation relative to pesticides. We, as well as pesticide personnel in government, are well aware of the pesticide safety factors, embodied in legislation such as the Pest Control Products Act, Food and Drug Act, Transportation of Hazardous Goods Act, Environmental Protection Act and the provincial Pesticide Environment and Health Acts. Such legislation regulates the registration, manufacturing, display, distribution, labelling, packaging, sale, use, handling, storage, transportation, disposal, and licencing of pest control operators.

Now, just for a moment, we would like to share with you some of the concerns of industry at this point in time. According to the American Association for the Advancement of Science Selected Symposium entitled "Pest Control: Cultural and Environmental Aspects", the total world food losses due to pests are estimated to be about 45%.

That's the world losses at 45%, this in spite of the pesticides that are being used and other control methods of pests. Similar losses in the U.S. where technologies are somewhat more developed are estimated at 33%.

According to National Academy of Science report, complete withdrawal of pesticides in the U.S. would result in a 30% reduction in crop yields, a 50% to 75% increase in the price of farm produce, and complete elimination of farm exports. And those figures would be somewhere approximate here in Canada, it would be reasonably similar.

According to Agriculture Canada figures, our food exports are nearly $9 billion. They are a major foreign exchange earner. Processing the food produced is the largest part of all Canadian manufacturing, and one out of every four Canadian jobs is created by and depends on agriculture, directly and indirectly.

Pesticide concerns of professional agriculturalists, environmentalists, and the general public are as variable as the pesticide themselves. If there is to be a sound analysis of pesticide use based on facts and the risk-benefit scenario, then these concerns must be addressed. And I've only taken a moment to outline a few of these concerns as far as we in industry are concerned.

One is the public attitude. Today, pesticides are an integral and important component of modern technology in the production of food and fiber. Modern pesticides have been in use over 30 years and the characteristics of various pesticides are now well known. In spite of these facts the general public has not accepted the need for pesticides use. And you've heard some of the reasoning behind that adequately expressed I think here tonight by some of the people that have spoken previously.

When it comes to the public, political and economic force, according to Statistics Canada again and I'm just dealing here with Nova Scotia but to make a point. There were over 39,000 census farms in Nova Scotia in 1931 and the farm population was 34.6% of the total population of the province. By 1981, 5,000 farms and they represented just slightly over 2% of the total population.

So when we look at this and we look at it in the context of the pest control experts here and the users of pest control products here and the general society here with government connecting all these three factors up with their policies, traditions and values affecting pest control you will find that pest control experts and the users of pest control materials have suffered quite a blow from the standpoint of their political and economic power in regards to what the shape of things are going to be in respect to pesticides.

And when we talk about these type of people and I'm addressing this, I'm mentioning this, I'm quoting now cause I find that very safe if I can quote from some reasonable source, the source is from the American Association for the Advancement of Science Selected Symposium and they're talking here about the general society or the largest group of us.

> "Those people who are neither professional pest-control scientists nor major users of their expertise constitute a highly heterogeneous group recognizable by what its members don't do instead of what they do. If the size of this group was small compared to the other two, then it might not be particularly important. It isn't: about 95% of the individuals in the United States are in it", and that again would be comparable here in this country, "and it therefore is a highly significant political and economic force. The members of the first two groups can ignore the interests of the overwhelming majority of their fellow citizens only at considerable peril to their own future freedom of action. In less industrialized countries, the agricultural sector is still frequently the largest social group. Even so, the general society may exert considerable pressure on the shape of acceptable technology."

Now a word about the elected representative. On the one hand we have agricultural and forestry industries which generally support the use of pesticides, pointing out the financial advantage to them, in producing their food and fibre and that it provides a stable supply of high quality and nutritious food and preserves the forests from the ravages of pests.

On the other hand there are those who argue that pesticides are unnecessary for food production, have permanently damaged the wildlife resource by contaminating the entire globe, and that their continued use threatens mankind with carcinogenic and teratogenic consequences. Such diversification of opinions on a very complex issue creates a great deal of stress on our elected representatives my friends and over-reaction does indeed occur.

I think we're all ... I see you smiling Dave, I thought you were. You were just yawning, sorry. I was anyway.

Alternatives. While research increases in the search for biological controls the demands for such controls in agriculture are so numerous and variable that pesticides are expected to continue to play the major role in pest control for at least the foreseeable future.

The integrated pest approach is gaining momentum and in some instances has accounted for significant reductions in the rates and/or times of application of pesticides. However, with the framework of even the most highly sophisticated integrated approach, pesticides remain very important. This is due primarily to the constancy of their effectiveness, efficiency and economic stability. We can't, we haven't got that to date with some of our biological controls.

Analytical capability has presented some real concerns. Among the most important developments over the past decade have been those associated with improvements in chemical analytical equipment, procedures and expertise. Now this has resulted, if we have those all three together, it has resulted in us being able to consistently and accurately monitor in ppb and ppt. The result, discoveries of chemical contaminant and metabolites of herbicides have been found, previously they were unknown.

We are concerned over the growing public resistance to the use of pesticides primarily because at this point in time we do not possess suitable alternatives. I was talking about this ppb and ppt and I'm going to stress a little more as I close this. The absolute necessity for all of us in today's society to try our best to put things in proper prospective and never turn away from a proper, well-founded and argue for and fight for it and we'll do the same thing, evaluation of any of the supposed problems.

Now in 1982 as a result of a roadside spraying in an area of Nova Scotia that I was involved with and I know something about, water from a farm pond used for watering dairy cattle was found upon chemical analysis to contain 2,4-D acid at .8 ppb. I had taken that sample from the pond because while it was 100 feet or 60 feet probably in from the roadside right of way fence line where the spraying had occurred, the farmer had lost, a cow had aborted so I collected the fetus and took it to the pathology lab for autopsy and at the same time took water analysis.

And sure enough we found it in the pond a .8 ppb. What we did was I requested our Dr. Ross Ming who at that time was the head of the pathology lab to peruse ... to see if he could find any feeding tests studies that were really good ones, and he did find one.

And it was a feeding trial in which a lactating cow was fed 5.5 gm of 2,4-D acid per day for 106 days at the end of which time they did exhaustive tests on the animal. There was no residue in the milk. Of course 2,4-D unlike something like DDT it goes through the system pretty fast. There was no residues in either the fat or the milk.

And then the animal was, there was no apparent damage of any kind to the animal and it was killed and autopsied for any organic problems which they could find none. It had for all intents and purposes reached a no effect level. Now, for a lactating cow to achieve that same amount of 2,4-D per day for 160 days from that pond of water with .8 ppb, it would have had to ingest over 1.5 million gallons of water each day for 106 days at the end of which I would arrive at a no effect level.

Now the point that concerns us and I know you're concerned and we are all concerned because here just within the past decade for the first time we're looking at some of these residues and we're saying ah ah it's there. And it is. And we couldn't do that 15 years ago. We didn't have this kind of analytical capability. But you see what is happening is our analytical capability is starting to exceed our knowledge of our toxicological significance. What the hell does it mean .8 ppb? We have and have had for years, we have had tolerance levels set by the federal authorities in this country for various pesticides in our food. You know?

Now the next thing that concerns us is pesticide (tape inaudible) I have been associated with pesticides for over 37 years and I will say that there has been gradual improvement. Maybe some of you here tonight would not agree but I have seen this and I wasn't working with industry, I was working with government and of course that's probably just as bad but anyway, you know. Even after I retired, a little period when I wasn't working for anybody, and I still saw this development, OK?

But at any rate, the toxicological studies are not only required for the herbicide itself today or the pesticides, but for its contaminants and metabolites as well. This has resulted in a marked increase in development costs and a drastic decline in the number of new products reaching the market place.

In 1956 the average cost to acquire the necessary data for registration of a pesticide was just a little over $1 million with one chance in 1,800 of any given test chemical becoming commercial. Today the cost is estimated at $40 million, requires eight to eleven years which is half the patent life incidentally, to obtain the data necessary for registration with one chance in 17,000 of the product reaching the market place.

And you will probably say what an awful thing that is. Now here is what happens. The number of major pesticides, now these are major pesticides introduced at world level over the past five decades are as follows. In the thirties, there was 1; in the forties there were 9; in the fifties there were 18; and the sixties there were 19; and in the seventies, there were 4. And I doubt there are 4 to date in the eighties.

In 1970 the cost of producing a pesticide was broken down into 53% for discovery and research and 47% for development and regulatory compliance. Today, no I'm sorry, in 1976, I haven't got today's figures, that was only six years later, that breakdown had changed. Instead of 47% for development and regulatory compliance, no I'm sorry instead of 53% for discovery, it was now 34% for discovery, 34% of the dollar and instead of 47% back then for regulatory compliance, it had risen up to 66% .

Excessive regulations and escalating costs could well result in more effective and safer pesticides already discovered, but that have not yet been commercialized, never benefiting mankind. They are there and we can't get them because of this. This in turn assures virtually no pesticides for minor and new crops thus eliminating the advantages of chemical diversification.

If you've got a number of chemicals and you change chemicals around a bit, you can get away, you can create some good things there as far as that environment is concerned. You can get away from resistant strains that will necessitate putting more stuff on this type of thing. I won't go into that detail now but it's a fact.

Problems associated with resistant strains, there it is, toxicology, residues, etc. would certainly follow. In the panic to maintain sufficient, efficient and economical food production, it is quite conceivable regulations pertaining to pesticide registration would be relaxed which in turn would insure additional problems.

Now, recommendations. At this time the Atlantic Council respectfully recommends:

1. It is more important today than ever before that banning or severe use restrictions placed on pesticides be incurred strictly on a careful scientific analysis of the benefit-risk scenario and not on emotion and circumstantial evidence. We feel very strongly about this and I know there are people in universities and elsewhere who feel the same way.

2,4-D for instance continues to be a widely used herbicide because of its consistent reliability and its cheapness. Its loss prior to a thorough analysis of the Kansas Study could pose serious repercussions to grain growers. And you know I would dare say my dear friends there's only one crop in Canada of a real major significance and that's grain, and it's not even down here, it's out west. So they would be hard hit, right-of-way maintenance personnel, and others.

Provincial authorities should remember this study is still under evaluation and unanswered questions remain right at this very moment. Also, remember that these cancer.. Now we were talking about, you were talking about, I don't think the last lady quoted the increase in the non-Hodgkin's lymphoma. That's the type of cancer, it's a very rare cancer. If you forgot 2,4-D altogether in what they call the normal background, there is one non-Hodgkin's lymphoma found in every 150,000 cases of cancer. In the Kansas Study, where these users and users only have been subjected to these rate of what is it 20 day period I think or a year or something like that over the years, there was a 6% increase. So now we are up to 6 cases in 150,000. It's still quite rare. That's one point.

Now the other point is it takes a while for these carcinogens to cause cancer. Usually the latent period they tell me and I'm fast approaching it for my cigarettes. If I quit cigarettes right now they tell me the latency period isn't over for another 20 years. In other words for the next 20 years, I'm going to go for 15 years and all of a sudden be stricken with lung cancer as a result of these things. But if I get through that 20 years, I'll be sound. So it takes time.

Now I'm making a point here my dear friends because you see I'm trying to put a few things here in perspective for all of us as I see it and you might disagree with me. And if you can tell me where you disagree and where I'm wrong, then I'll have to agree with you or you know I'm not a very good guy.

But when I look back now and I say those Kansas farmers were having all this exposure you see, I know from experience because I've been in this business for 37 years and I know from experience that I was out there in the 1950's and in the 1960's.

And I was spraying brush gentlemen with 2,4-D and 2,4,5-T and I had a high pressure sprayer on a little trailer on the back of the truck and you wouldn't believe it. I cranked that thing right up to about 600 pounds pressure and I'd go into this farmer's patch and I'd say stand back, I'm going to look after all this brush for you. And that thing was just fogging out you know. She'd be blowing around into the next town, you see.

So I guess what I'm trying to say is my dear friends is that when these people that were involved obviously in the Kansas study, back in the fifties and sixties, there wouldn't have been nearly the concerns on their part, the same people, for protective equipment and just common good ordinary horse sense in application of pesticides as there is today because of departments of agriculture, industry and all the rest, universities all preaching this continually particularly to the heavy users like farmers. I'll guarantee you that.

And when I say good ordinary horse sense can often do away with the necessary equipment. Just make sure that the spray movement isn't at the front of the tractor where it can blow back on you, that it's at the back and which way the wind is blowing. Just a few simple little things like that.

OK, So this is a real concern. In addition we recommend: provincial pesticide legislation be amended where necessary to provide for temporary suspension or restricted use as opposed to banning. This has been a concern to us as to what happened here within the framework Mr. Chairman, of your province. But I understand that the only way in which you can handle it, as I understand unless I'm wrong your legislation was, if I had the word, kind of banning. So it's on that basis that we're suggesting not only this province but Nova Scotia and P.E.I. and any of the four Atlantic provinces.

Look into their legislation and keeping with that so that in the event there could be some real loop holes which they look like it's coming in the Kansas study on the 2,4-D, I'll warn you now. It's not all that hot a study from what I'm hearing from pretty good reliable sources. I'm talking pesticide toxicologists that are some hot in the States. Now maybe I'll be shouting a different tune when I see you people next year if I'm here, if my cigarettes don't kill me first.

But if we can kind of take a look at that and have some little provisions, temporary registration, or restricted use as opposed to banning in order to allow us to put that thing on perhaps a little tighter reign use-wise until such worthwhile evaluations are finalized.

2. The Atlantic Council does not consider pesticides as hazardous wastes other than as associated with fires or spills. With current pesticide legislation at both federal and provincial levels, and with close liaison afforded industry on government committees and boards aforeto mentioned, we recommend that unwanted pesticides be handled within the confines of such legislation, committees and boards rather than being treated in the broader context of hazardous wastes and the associated legislation therewith.

Now I'm talking here about the province of Nova Scotia. In Nova Scotia we have a Pest Control Products Act. But we also have a Dangerous Goods and Management of Hazardous Waste Act. And they both refer to pesticides so we're saying keep it with where the pesticides action has been. And I will say that the Nova Scotia Department of Agriculture and Marketing initiated handling of unwanted pesticides 10 years ago. That was before I worked there. I believe I'm right on that, I think that was just before our Nova Scotia Department of Environment came in to being.

3. This is our next recommendation. In relation to the Canning warehouse fire, it is hereby noted that industry has response teams available immediately and in this case Union Carbide provided an emergency supervisory team within hours of the outbreak of that fire and clean-up personnel shortly thereafter. It should also be noted that CPIC makes available plans for "Pre-Fire Handling of Agricultural Chemical Fires". They have forms in which to assist in this. Discussions are presently being held within industry relative to super storehouses and transportation of pesticides from these super storehouses directly to the grower.

To ensure greater safety in transportation and in the storage of products, The Atlantic Council requests government consult industry for their, that is industry's' input into development of minimum standards for pesticide storage facilities.

4. Industry also recommends that governments develop clear lines of authority relative to the handling of fires and spills. Industry again would appreciate and recommend government request their input into such planning.

I've left one out and I will see that it is mailed to you but the next one is that we would recommend that the appropriate provincial government departments encourage the federal pesticide regulatory authorities to put greater effort into evaluation and implementation of tolerance levels for pesticides in potable water. And we consider that important and that was brought up here I think this evening.

5. In the view of ever increasing pesticides legislation at provincial level, the Atlantic Council recommends that provincial departments involved with supervising and implementation of such legislation hire individuals with appropriate scientific qualifications.

As far as the future is concerned, we feel it is a fair assessment to state that continuing into the 1990's:

1. Pesticides will remain an integral tool of vegetation management of utilities and industrial sites as well as food and fibre production.

2. That public concern will continue to mount both for and against pesticides.

3. Pressure will increase for legal against the media relative to bad reporting and blatant attempts to engender horror stories. Is that the press out there? That's not the press is it?

4. Pesticide regulatory legislation and guidelines will continue to be developed.

5. More time and money will be expended in the search for alternatives to pesticides.

And in conclusion, it is most important from our standpoint that pesticides be placed in proper perspective relative today to cancer causing factors. And I'm going to try to close tonight and do this.

Dr. Bruce N. Ames, from the University of California, had an article entitled "Dietary Carcinogens and Anticarcinogens" published in the September 23, 1983, issue of Science, Volume 221, and it discusses 16 examples of natural carcinogens, teratogens and mutagens in the human diet in just 16 examples of our dietary intake. And he says and I quote:

> "These occur in every meal, all perfectly natural and traditional. Nature is not benign. It should be emphasized that no human diet can be entirely free of mutagens and carcinogens and that the foods mentioned are only representative samples".

Those 16 examples were only representative, imagine all the other foods we got. The article goes on to state that these 16 examples, plus coffee, illustrate that the human dietary intake of "natures pesticides" he calls them is probably at least 10,000 times higher than the dietary intake of man-made pesticides.

The recent book "Toxic Terror" also places certain pesticide misconceptions in perspective. This book is authored by Dr. Elizabeth Whelan with a forward by Norman Borlaug who was the winner of the Nobel Peace Prize. The publisher is Jameson Books, Ottawa, Illinois.

Now here's the thing that's interesting to and I'm coming awful fast to the end my friends. Ame's paper dovetails very nicely now he's talking about these carcinogens in our daily diet. They're natural chemicals they just have identified them within the last decade. Just like their chemical analytical ability. Now they're finding these chemicals and they're testing them on rats and these animals and they're finding they're carcinogens. They're causing cancers and tumors. Now listen to this.

Ame's paper dovetails nicely with findings of a scientific committee commissioned by the American National Cancer Institute and lists the major cancer factors as follows:

Diet	35%
Tobacco	30%
Viruses	5%
Occupation	4%
Alcohol	3%
Excessive Sunshine	3%
Environmental Pollution	2%
Medicine and Medical Procedures	1%
Food Additives	1% or less

Despite all these risks, and here's the good news - that was pretty bad news - here's the good news. Despite all these risks the overall trend in life expectancy in the United States is continuing steadily upward.

Further Canning pesticide fires are extremely rare in the Atlantic provinces. And we trust that you'll keep this in mind.

In addition the Atlantic provinces are not large consumers of pesticides. Now I'm more knowledgeable about Nova Scotia so I'll throw it back in Nova Scotia. I haven't talked to anybody else it's just that I know it better, that's where I've spent 37 years.

In Nova Scotia approximately 60,000 acres of crop land is treated annually with pesticides. And that 60,000 acres compares with 13,000,000 acres of land mass. That's the province's land mass. 13,000,000 acres in Nova Scotia. And we spray 60,000 acres.

And I don't think I'll read the final couple of things here but I hope gentlemen that, and I feel certain that you people will present this in its entirety to your Minister and that serious consideration will be given to our recommendations. And I hope if need be that we'll have the opportunity to make a presentation another year. Now Mr. Dave Thompson of Formanda who he tells me will soon become Monsanto which is maybe a more common name to some of you is with me as well and between us if there are any questions, possibly we might be able to answer.

CHAIRMAN: Are there any questions from members of the Board? Any questions from the floor? Yes.

MRS. CATHERINE RICHARDS: I would just like to make a comment, I don't really have a question. When you were speaking about the 2,4-D study, you said that there was a 6% increase in the non-Hodgkin's lymphoma, the figure is actually 6 times increase which ... and the fact that it's a rare cancer doesn't make it insignificant. The study relates to studies that were done in Sweden and I don't think that you can dismiss it that easily.

MR. DON PALFREY: I stated that the background for all normal cases would be one non-Hodgkin's lymphoma type of cancer, one in 150,000. The Kansas study among those farmers, there was an increase of 6 times. Did I say percent?

MRS. CATHERINE RICHARDS: Yes you did.

MR. DON PALFREY: Oh did I? Well I apologize, my dear, I'm sorry. Six times so there's six per 150,000.

MRS. CATHERINE RICHARDS: I'd like to make a comment about your comments about Bruce Ame's study as well.

MR. DON PALFREY: Right.

MRS. CATHERINE RICHARDS: I think that in a total context of a study which is looking at chemicals which may be carcinogenic and also which are anti-carcinogenic which we don't know very much about yet, we have to remember that in relation to food, the human species has been evolving over a long time. But in relations to chemicals, like 2,4-D no human being has ever existed in exposure to those chemicals for the human life's span. So that's just a comment I'd like to make there.

MR. DON PALFREY: And yet as I say the figures indicate that our life expectancy span is continually going upwards. It's kind of nice news you know.

MRS. CATHERINE RICHARDS: I have one other comment. You said that in Nova Scotia where you have did you say 15,000,000 acres of land mass

MR. DON PALFREY: Approximately 13,000,000 of total land mass yes.

MRS. CATHERINE RICHARDS: Right. I think that we have around 15,000,000 here. And in Nova Scotia 60,000 acres were treated with pesticides? Well, in New Brunswick, in 1976 more than 10,000,000 acres were treated with forestry pesticides.

MR. DON PALFREY: Yes I realize.

MRS. CATHERINE RICHARDS: And that why maybe you're hearing more concern here than you would in Nova Scotia.

MR. DON PALFREY: Now I hope I said 60,000 acres of crop. Didn't I? Crop land? It should be in that, isn't that in that report?

CHAIRMAN: Crop land.

MRS. CATHERINE RICHARDS: Yes, crop land.

MR. DON PALFREY: Maybe I got carried away and I wasn't reading it but it is 60,000 acres of crop land as opposed to forest. We have additional acreage of forest in Nova Scotia but not to the level you have it.

MRS. CATHERINE RICHARDS: No I know.

MR. DON PALFREY: No, I agree. Yes, that's right.

CHAIRMAN: It is a public meeting. We've gone through the list of those individuals who has expressed an interest in making a presentation. Is there anyone who wishes to make a presentation who is not on the list? If not, then I'd like to extend my thanks to the members of the Board and for Ron Hicks who came out to fill in for Dr. Walters, to Ken Corbett for all his hard work in the organization of putting together the agenda and contacting those people who made presentations.

Those people in the backroom (translators) who have been doing like this and like this and recording everything that has taken place. I would also wish to thank those people who took the time and the effort and the interest to make presentations and let me assure you that all the comments, all the briefs will be forwarded to the Minister and the recommendations that are attached to some of those will be also forwarded to the Minister.

With that, I'd like to close the annual meeting for 1986 and wish you all a safe drive home.

Adjournment